BACKWARDNESS IN THE BASIC SUBJECTS

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BACKWARDNESS IN THE BASIC SUBJECTS

BY

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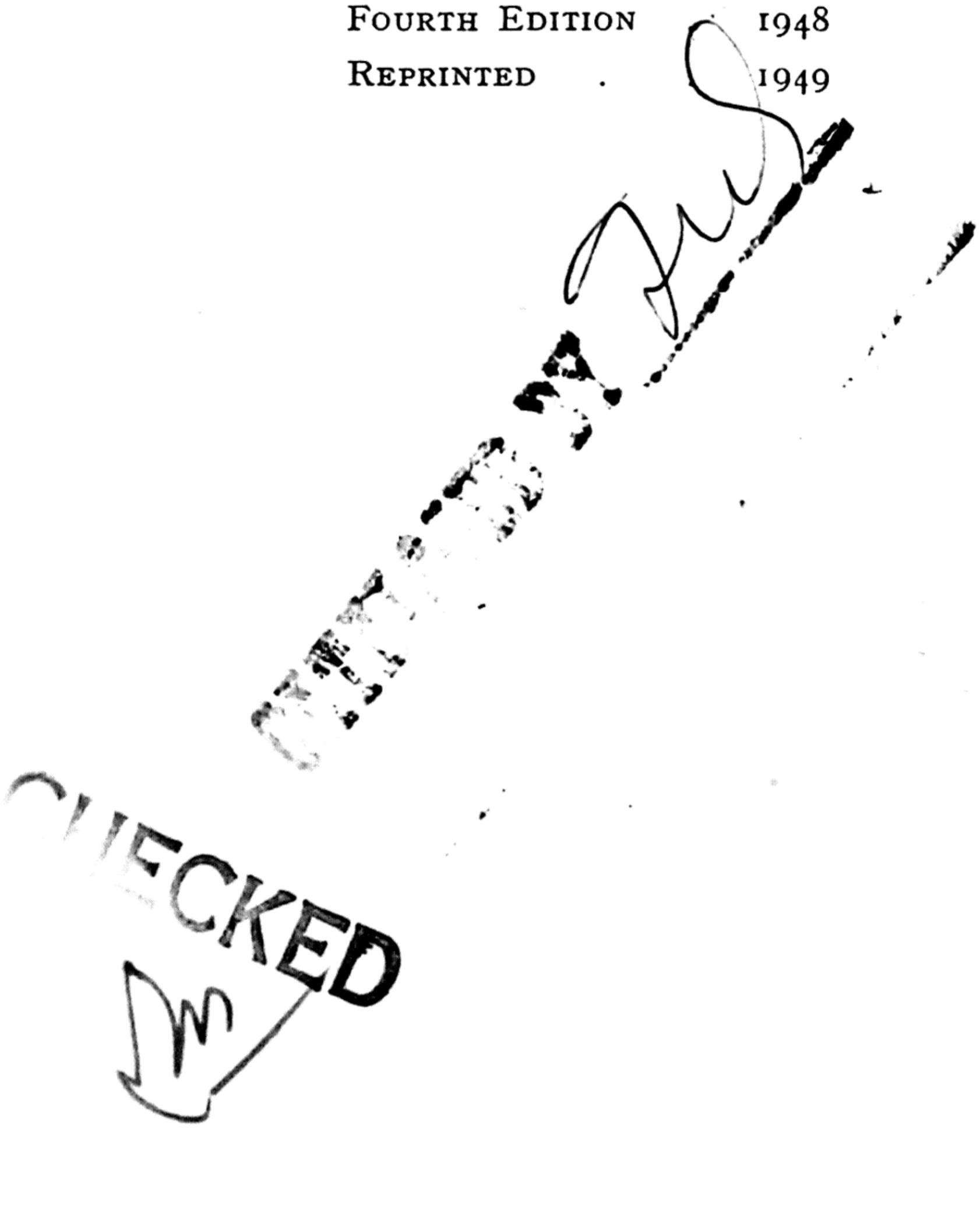
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PREFACE

THE last two decades have produced striking improvement in the amount and quality of the consideration given to children who fail to make normal progress in school. There have been numerous studies of the characteristics and requirements of backward children both as individuals and as units in an educational system. A recent example of the former is Sir Cyril Burt's excellent volume, *The Backward Child*; while a scientific study of the latter kind is Miss M. E. Hill's *The Education of Backward Children*. In general, most of these studies have dealt with children whose educational deficiencies are sufficiently serious to warrant the organisation of special classes and the development of special methods in both primary and secondary modern schools. Continuous testing and careful recording reveal that from 65 to 80 per cent. of the pupils in these classes are innately dull; they are, in other words, debarred from achieving scholastic standards commensurate with their chronological age because of inborn intellectual deficiency.

In addition, however, to this section of permanently handicapped backward children, there are two groups whose scholastic disabilities are largely of a remediable kind. There are, firstly, the children who make up the remaining 20 to 35 per cent. of pupils in "C," "D," or special classes for the dull and backward, but who are not innately dull; their educational difficulties in the main derive from various combinations of extrinsic conditions. Secondly, there are those children, found sometimes in special classes but more often in ordinary classes of junior and senior schools, who, normal or above normal in general intelligence, are specifically backward, that is considerably below level, in one, two, or perhaps three allied subjects. The necessary emotional adjustment together with the

removal of the backwardness disability can be effected in most children in these two groups by the employment of appropriate diagnostic and remedial measures.

Generally backward children, including both dull and not dull, form roughly 10 per cent. of the school population of Britain, although this figure varies from 5 per cent. in some areas to 27 per cent. in others. Specific backwardness, as I show in the body of the text (Chapter IV), varies from 2·0 per cent. of disability in spelling amongst girls in "good" areas to 7·3 per cent. of boys specifically backward in written English in "poor" areas, and within this range the percentages fluctuate according to the school subject, the sex of the children, and the economic and cultural conditions of the district. The average amount of backwardness, both general and specific, within the schools is approximately 15 per cent. Clinical studies of this 15 per cent. of handicapped children, modifications in educational organisation for them, and empirically determined teaching methods of a general kind have to date been adequate. For teachers, psychologists, and parents the techniques that need augmenting most are, first, the practical means of diagnosing the causes and characteristics of their children's difficulties in each of the basic subjects and, second, the provision of appropriate methods and suitably graded material for remedying the particular weaknesses revealed by the diagnosis. This I have already attempted to do for pupils backward in arithmetic in *The Diagnosis of Individual Difficulties in Arithmetic* which is concerned with the causes of disability in arithmetic, with scientifically constructed diagnostic arithmetic tests, and with the use of suitable remedial material in card and book form.

The present volume deals with disabilities in reading, spelling, oral and written English. Its material is based on the results of active research spread over a period of eight years in both primary and post-primary schools. The cases of backwardness on which studies of causation, diagnosis, and remedial methods were based were repre-

sentative of a school population of approximately 15,000 pupils mainly in London schools, but also in schools of contiguous authorities, and more recently in schools in and around Nottingham.

Examination of the problems connected with disability in reading, spelling and English was conducted with reference mainly to backward children of average or above-average intelligence. Although the survey did include a few dull children, the aim was to select cases of specific backwardness in as pure a form as possible (unobscured, that is, by the additional intellectual and emotional handicaps of innate dullness), and so ensure the utmost validity in the findings. The diagnostic tests and remedial methods employed apply, however, with but slight modification equally well to backward children of both normal and subnormal intelligence.

Throughout the text the emphasis is laid on practical procedures. In other words, I have tried to provide methods of helping children who may be backward in those subjects so essential to later school progress and to efficiency in everyday life. At the same time the material is conditioned by scientific considerations, and the student of psychology should find in many of the sections of the book much that will interest him in regard to the mental processes of elementary-school children. Statistical methods, though used extensively throughout the active investigation, have been sparingly introduced into the text. Whenever possible, case studies have been included to clarify characteristics either of concrete types or of individual difficulties.

The first two chapters, on individual difficulties and their relation to backwardness, are essential to an understanding of the whole problem. It is necessary to have a clear conception of the forces that go to the moulding of personality and of the various factors that condition progress in school work before attempting to plan case studies of, apply diagnostic tests to, or institute courses of remedial teaching for, children endowed with widely differing intellectual equipment and revealing varying emotional

reactions. Indeed, scholastic disability in too many cases can be ascribed to the failure to grasp the far-reaching importance of the interaction of physical conditions, intellectual abilities, emotional attitudes and environmental influences. I make no apology, therefore, for the long introduction with which I have prefaced the actual study of backwardness, but rather urge all who are not conversant with a modern interpretation of the psychology of individual differences to devote some care to this part of the book.

I have thought it proper to give throughout the book extensive evidence of the intimate connection between emotional attitudes and scholastic disabilities. Continuous reference is made also to the deterioration of personality adjustment in backward children and conversely to the rapid development of personality as progress is made in school subjects. This was particularly noticeable in regard to disability in reading, which in time might produce loss of confidence, apathy, a sense of frustration and an anxiety so intense as to colour the whole of a child's attitude towards school and school work in general. The close connection between progress in school subjects and the mental health of children is apparent. Adequate treatment of backwardness particularly amongst pupils of normal intelligence would do much to eradicate the minor neuroses and unhappiness such backward children commonly exhibit.

Of equal social significance is the relationship between backwardness and undesirable behaviour. The backward children investigated yielded more than their share of cases of disorderly conduct, lying, cheating, truancy and exaggerated forms of self-display. While average figures from other areas reveal that over 60 per cent. of young delinquents are backward, many of them to the point of complete illiteracy, yet only 30 to 40 per cent. of them are below average intelligence. The fact that almost 6 out of every 10 delinquents are so backward in reading as to be deprived both of the means of making progress in school

and of a vital leisure activity indicates one worth-while direction from which this problem of delinquency might be attacked.

I could not have brought the results of this extensive research to published form without placing myself under heavy debts which it is a pleasure to acknowledge. There has been the continued stimulus of my first teacher in psychology, Professor Sir Cyril Burt. In the early stages of my work I received kindly help from Miss G. Hume, M.A. and Miss E. Wheeler, M.A. on points concerning educational disabilities. To the many teachers who experimented with tests and remedial methods and to my students who helped with test results I am particularly grateful. My thanks are due also to Professor H. R. Hamley, Dr C. M. Fleming and Dr M. M. Lewis for reading the book in typescript and at various stages of its preparation, and to Dr B. Brooks for reading the Sections on English, Chapters XVI-XIX.

I wish to thank the Editor and publishers of the *British Journal of Educational Psychology* for allowing me to reprint selected parts of articles I have published in various numbers of that journal. I am grateful to Dr H. G. Stead for providing the blocks for the illustrations of Brambling House Children's Centre.

To the Chief Educational Editor of Messrs Oliver and Boyd I am indebted for help and advice in seeing the book through the press.

Finally, I owe the greatest debt to my wife, but for whose constant encouragement, pertinent advice on psychological problems, and indefatigable assistance with marking and with calculations it is unlikely that I should now thus happily be approaching the conclusion of my task.

F. J. S.

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CHAPTER I

THE PROBLEM

Individual Differences and their Bearing on Backwardness

The problem of backwardness in school, whatever its type or degree, is now recognised as part of the larger problem of individual differences among children. Inability to progress normally in school work was formerly attributed to laziness or lack of intelligence. Recent research and records from class teaching indicate, however, that its explanation is more likely to be found in a study of the pupil's entire personality.[1] The failure to maintain a standard of scholastic progress compatible with intellectual capacity is associated with factors intellectual and emotional, physical and environmental.

Psychological studies have, in recent years, revealed innumerable instances of the interdependence and inter-relation of these four fundamentals in the formation of personality.

The principal force in child development is now realised to be a purposive striving for expression and power in physical, emotional and intellectual realms.

Security, social contact, and a measure of success are the usual nutritives for normal growth of this expressional life, but the particular nature of the dynamic urge differs with the individual's inborn equipment, and differing personal attitudes are developed towards life's activities. These reactions have, in turn, a vital influence on the

[1] The word "personality" is here used in the psychological sense and is taken to mean that complex integrated resultant of innate equipment and environmental influences attained by an individual in the course of his development. It is built up from intellectual abilities, temperamental traits, motor capacities, sentiments, complexes, habits, and physical characteristics, which, through a variety of experiences, are moulded into a personal pattern which distinguishes one individual from another.

elements of personality already formed, and as a consequence a child's personality presents, not only a picture of inherited tendencies but, in addition, a mirror of the conditioned states produced by the environment.

In the field of education one is made acutely aware of this psychological interplay of inherited characteristics and acquired attitudes, so that all concerned in the teaching of children are constrained to remember that progress in school is dependent not only on intellectual abilities but also upon emotional stability, interests, physical fitness and the nature of personal contacts in home, school and society.

Equally important is the recognition of the inter-dependence of these factors. Favourable influences, advantage or success in one direction bring, in most cases, increased efficiency and invigoration in other directions, while unfavourable conditions, defect or failure in one sphere can produce lessened effectiveness in several other spheres. If, for example, a pupil is especially interested in school handwork his output of intellectual energy in that subject is increased by virtue of the emotional incentive ; he thinks more clearly and quickly because his power of application and his speed of reaction have been temporarily raised to a maximum. In the physical realm the onset of fatigue is postponed and more lasting general effect may be obtained because his school work and out-of-school activities are linked together in a natural way and his leisure time and every-day contacts in that field are enriched and made more pleasurable. Similarly, if a pupil is failing in a school subject, the all-pervading influence of failure not only in itself reduces efficiency in the particular academic tasks, but also often affects un-favourably the emotional and intellectual accompaniments of associated activities.

Scholastic failure must be regarded then as psychological failure. To consider a single intellectual factor or an isolated experience in the child's life as the sole causal factor in backwardness is totally unsatisfactory. Just as

an interlocking pattern of forces conditions each child's educational success, so it is invariably a plurality of forces which produce maladjustment in school. These various contributory forces are the same as those forming the bases of individual differences in children. Hence the entire problem of scholastic backwardness is, in some measure, clarified if we have a knowledge of the directions in which individual variations manifest themselves.

For this reason a brief study is made in the following pages of the scope of individual differences in children. The nature and amount of divergence in various directions is surveyed, while passing reference is made to the most practical methods of measuring such variations.

It is only when we realise that the harmonious and effective working of the child's mind depends on balanced and satisfying expression in a number of channels that we can really understand the characteristics of each child. We can perceive his difficulties and determine how best he can cope with them. We can understand his needs and realise how some of his apparently inexplicable conduct is an attempt to satisfy those wants. Lastly, we can assess his potentialities and cater properly for intellectual development and consequent emotional satisfaction.

Only by the analysis of individual differences can the nature and implications of backwardness in school be understood and provision be made for the diagnosis and treatment of its several forms.

Individual Differences

There are four main forces or elements which contribute towards making each child an individual, different and distinct, in some ways, from every other child. These forces are :

A. Intellectual Characteristics.
B. Emotional Tendencies.
C. Physical Conditions.
D. Environmental Influences.

4 BACKWARDNESS IN THE BASIC SUBJECTS

What is meant by these headings will depend upon whether one includes innate with acquired characteristics or whether one differentiates between them. The latter arrangement, though definitely more valuable, would in some instances be of doubtful validity. Not in all characteristics can one distinguish with reliability what is acquired from what is inherited, so soon are inherited tendencies overlapped or augmented by strong environmental influences. Certainly there are some relatively simple cases in which differentiation might be correct. Degree of intelligence, for example, could be included under innate equipment while educational attainments could be excluded. An open mind should, however, be kept on the question of inheritance and acquirement of characteristics, physical, emotional and intellectual ; for, apart from evidence that degree of general intelligence is inborn and that degree of general emotional stability is an innate factor in personality, not a little of our present information is unreliable. Emotional attitudes that were once regarded as inborn have been shown to be simply conditioned states resulting from early environmental experiences. So, too, certain physical defects or excellences that were believed to result from direct variations in germ plasm have been demonstrated to be due to pre-natal or post-natal conditions.[1]

Similarly, in the realm of specific aptitudes, the direct inheritance of special ability in such fields as music, painting, languages, mechanics or mathematics is of very doubtful certainty. Further research will probably show that a high standard of achievement in any special field is probably due to at least a normal, but possibly a supernormal, degree of general intelligence ; to intense and continuous interest in the activity ; and to suitable opportunities and favourable environmental influences from an early age. Certainly there may be some minor inborn physiological attributes

[1] Perhaps the best example of this is the advance that has been made in recent years in the cure of cripples. It is now claimed that at least 95 per cent. of cripples are curable, and the slogan " The cripple is made, not born " has been amply justified by marvellous orthopædic work both in the cure of actual cripples and in the prevention of potential crippling conditions.

which predispose to greater success in, say, music, athletics or languages, but this does not warrant the assumption of the inheritance of an innate specific intelligence or specific aptitude. There are probably many members of society who have the requisite intellectual and physiological equipment to become successful musicians, painters, mechanics or linguists, but whose early environment did not make provision for the necessary training or awaken the appropriate emotional incentives.

Finally there is evidence, directly related to the major problem of specific disabilities in school subjects, that specific educational disabilities do not very often result from inborn factors. By far the greater amount of scholastic backwardness amongst normally intelligent pupils is associated, not with innate mental or physical handicaps, but with unfortunate environmental and emotional experiences.

Important as this information is, one should be ready to accept and make provision for easily discernible innate characteristics. There are, in the personality of most pupils, strengths and weaknesses which reliable family history reveals as almost certainly inborn, if not inherited ; of these full notice should be taken. Unfortunately there is, with some people, a tendency to minimise or neglect the effect of inborn conditions upon the mental and physical make-up of the child. They, like the Behaviorists,[1] are inclined to dismiss hereditary factors as being of little importance, believing that the formation of personality—mental attitudes, emotional reactions, moral habits, motor sets—is dependent solely on environmental influences, that is upon the formation of a correct and adequate body of conditioned reflexes. They neglect the point that very young children react quite differently to exactly the same environment, while monozygotic or identical twins [2] brought

[1] J. B. Watson, *Behaviorism* (W. W. Norton & Co. Revised Edition, 1930).

[2] Those twins who come from a single fertilised ovum, which at some early stage of its embryonic career splits into two fertilised eggs, having the same protoplasmic and nuclear basis and therefore as nearly as possible the same physical, emotional and intellectual constituents.

up in very different environments are very alike in level of general intelligence, and react similarly in situations of similar emotional atmosphere though in quite dissimilar settings.[1] Moreover, there is no significant difference in the amount of resemblance in mental traits between younger and older twins, nor does schooling produce a greater similarity in twins' academic attainments than one finds on comparing their levels of intelligence. Further evidence of the influence of inheritance is to be found in studies of orphan children who have been reared in similar environments for a considerable time. These are no more alike in mental traits than unrelated children paired at random.[2]

A second group of parents, teachers, and occasionally psychologists, believes that even if one is aware of the inherited traits which characterise a child little can be done in the matter of changing or altering expressions of such traits. This attitude is based partly on ignorance and partly on laziness.

Then there are parents who are a little too apt to seek explanations in family inheritance for aberrations in conduct or poorness in school achievement. Such interpretations often provide a suitable excuse for parental shortcomings in the upbringing of the children. The worst result of this negative attitude is the inhibitory influence it directly exerts upon the child's outlook. Particularly is this so where one or other of the parents condones with the child, explaining that his weakness in a school subject is apparently a family failing. Too often in the course of the present investigation did one encounter the barrier raised

[1] A fascinating study of the behaviour of dizygotic (non-identical) and monozygotic (identical) twins with respect to delinquent and criminal tendencies has been made by Lange. See *Crime as Destiny*, Lange, translated by Charlotte Haldane.

[2] The actual agreement in distribution of intelligence between the two groups in terms of a correlation ratio is 0·90. See *Twins and Orphans*, by A. H. Winfield. *The Inheritance of Intelligence* (J. M. Dent & Co., 1928). Also "An Investigation into the Relation between Intelligence and Inheritance" (Monograph Supplements), *British Journal of Psychology*, vol. v, No. 16, by E. M. Lawrence.

A useful summary of the investigations on innate and environmental factors in intelligence is to be found in *The Fight for our National Intelligence*, chap. iii, by R. B. Cattell (P. S. King & Son, 1938).

in the home by parents who made such remarks as, " Never mind, Frank, I could never spell and I can't spell now, so don't bother about it." Nor are some teachers above reproach in this respect. My records of daily research in the schools reveal quite a number of instances where teachers have upbraided pupils with statements that they would never learn to write a composition or do their arithmetic, since their brothers or sisters (as the case might be) never could.

Most recent psychological evidence indicates the necessity of remembering the importance of both inherited characteristics and environmental conditions for normal child development. It is not so much a matter of bringing environmental forces to bear upon the child in order that potential traits can develop, as a need for grading and, as far as possible, controlling environmental influences in relation to the child's inherited equipment.

In accordance with the issues raised in the foregoing paragraphs no hard-and-fast differentiation will be made between inborn and acquired characteristics in our schedule of elements contributing towards the formation of individual differences in children, but at the same time a distinction should be adopted simply for the practical purpose of guidance in the use of the environment to maximum value with respect to the child's innate equipment in relation to school progress. Thus in the case of a clever child who demands full explanations of all he is taught or told, it is well to realise that such a trait is a temperamental one, usually innate, bound up with the entire personality, and as far as possible we should provide the necessary explanations rather than seek to change his over-enquiring attitude. Consider, too, the case of an unstable child whose work in mechanical arithmetic and spelling is constantly characterised by untidiness, lack of system and small inaccuracies. Almost invariably he knows how to do the sums but is likely to get at least half of them wrong through carelessness in computation. Errors such as *nine times seven are fifty-four*, or *nine from fourteen leaves four*, are numerous, but are rarely

made in mental arithmetic. Similarly, misspellings like " retured," " brigth " are never made when the words are spelled aloud. More can be done for this boy by realising the inborn nature of his emotional instability and by suggesting simple memory tags or methods for checking his work than by constantly urging him to be more careful or to set his work out more clearly.

On the other hand if, with a slow reader, there are indications that shortness of visual perceptual span is an acquired condition due to early reading experiences, and is not an inborn imperfection, then one can directly apply remedial methods with confidence.

A. Intellectual Characteristics

Under intellectual characteristics are included all activities and assessments primarily concerned with cognitive or thought processes, either general or specific. Thus, degree of general intelligence, nature of specific aptitudes and proficiency in separate mental operations such as imagery and memory are here considered. In addition this section will include an estimate of the information which has been assimilated by means of the individual's inborn intellectual equipment, namely, the kind and extent of his general and scholastic knowledge. These various components of intellectual life will be briefly considered in relation to educational problems in general and to scholastic backwardness in particular.

In the field of cognition the accepted trend of psychological research differentiates two aspects of intellectual power, namely, general ability and specific abilities. This concept of mental energy, known as the " two factor theory," is due to Spearman who has shown, as a result of intensive researches based on a refined correlational [1] method of approach, that mental abilities are not independent but are

[1] A correlation is simply a statistical device for calculating the extent to which two series of measurements vary together. The degree of relationship is expressed as a numerical coefficient with a range of variation which lies between the two extremes of $+1{\cdot}0$ and $-1{\cdot}0$. Thus, if there were no relationship at all between ability in reading and ability in spelling the correlation coefficient (r) would be zero ($r = 0{\cdot}0$) ; if the relationship were perfect then

connected by a " general factor " (g) which is common to them all.[1] No matter what the thought process is, whether it be simple or complex, momentary or sustained, this general factor enters, in some degree, into it.

In addition to the general mental factor there will be found in any set of intellectual measurements many *specific factors*,[2] characteristic of the tests used and of the individuals tested. Some of these specific factors are independent of one another, some are related. Thus if a pupil made scores on three tests where the specific factors were independent his success in the different tests would be represented symbolically as (1) $S = ag + bs$, (2) $S = a_1g + b_1s_1$, (3) $S = a_2g + b_2s_2$ where S = score, g is the amount of the general factor exhibited by the individual x, with weighings a, a_1, a_2 in the three different tests, and s, s_1, s_2 are the factors specific to the particular tests for the individual x, and b, b_1, b_2 represent the weights of the specific factors respectively. But there are series of tests where the specific factors are related. Had the tests been those of arithmetic, with test items in problem, mechanical and mental arithmetic, then the specific factors would have had something else in

the coefficient would be 1·0 ($r = +1·0$) ; if the mental processes required in the two subjects were diametrically opposed so that ability in one meant lack of ability in the other then (r) would be $-1·0$. But we know that there is a mental factor common to both. A certain amount of general intelligence is needed both to spell and to read, so that we can expect at least a partial positive correlation (in effect it is about 0·5 to 0·7 according to the kind of reading tested). As we also know that, to some extent, different mental operations enter into the two subjects of reading and spelling we can still further accept and explain the partial correlation. In most psychological measurements, where variables enter and cannot be eliminated or held constant, the correlations are partial.

[1] For an excellent consideration of the nature of intelligence in the light of modern research, see *The Testing of Intelligence*, chaps. i and ii, by H. R. Hamley (University of London Institute of Education and Evans Bros).

[2] Note should be taken of the meaning of the term " factor " in factor analysis. Burt regards a factor as " simply an average or sum total of certain measurements empirically obtained " (*Factors of the Mind*, p. 73). " The purpose of so-called analysis is simply to find the best possible ways of grouping the available tests so as to represent this general characteristic or that. Logically factors are principles of classification." He warns us against regarding factors as causal entities. " This principle of classification cannot be treated as factors in the mind, *e.g.* as ' primary abilities ' or ' mental powers ' " (*loc. cit.* p. 249 *et seq.*). Thomson similarly points out certain limitations to be observed in our conception of factors. See *The Factorial Analysis of Human Ability*, p. 67 *et seq.* ; p. 240 *et seq.*

common ; there would have been a large overlap in their nature. Such factors are termed "*group factors.*" They are defined as those (specific factors) which occur in more than one but fewer than all of any given set of abilities.

Although it is possible to obtain a group factor from the overlap of any two tests where specific factors are similar, the name has been reserved for the rather broader application where the factor under consideration is of some psychological importance and where it represents the psychological agreement which is characteristic of a group of tests, as for example in the case cited above, an arithmetical group factor.[1]

The general factor represents a general mental power, and can for all practical purposes be considered as synonymous with general intelligence, since the tests devised for measuring the general factor are called, and considered as suitable, tests of intelligence.

General Intelligence

General intelligence may be defined as an inborn, all-round mental power[2] which is but slightly altered in degree by environmental influences, although its realisation and direction are determined by experience.

General intelligence is inborn, not acquired. Though

[1] For an acquaintance with the nature of factors first read chap. i, *The Testing of Intelligence*, 1936 (Evans Bros.), in which Hamley has discussed simply the researches of Spearman and Thurstone, then chap. viii, *The Measurement of Abilities*, P. E. Vernon (University of London Press) 1940, and "Mental Abilities and Mental Factors," C. Burt, *The British Journal of Educational Psychology*, June 1944.

Students requiring an account of the mathematical theory of factor analysis could not do better than read Godfrey Thomson's excellent exposition, *The Factorial Analysis of Human Ability* (University of London Press, 1939). A few doing factor analysis will have need to use *The Abilities of Man : Their Nature and Measurement*, C. Spearman (Macmillan, 1927) ; *Essential Traits of Mental Life*, T. L. Kelly (Harvard, 1935) ; *The Theory of Multiple Factors*, 1933 ; and *The Vectors of Mind*, L. L. Thurstone (Universitv of Chicago, 1935) ; *Intelligence, Abstract and Concrete*, W. P. Alexander (Monograph Supplement No. XIX, *The British Journal of Psychology*, 1935), and finally, Burt's recent articles in the *British Journal of Psychology* and his clear comprehensive volume, *The Factors of the Mind* (University of London Press, 1940).

[2] For an interesting discussion on what is meant by mental and nervous energy, see the result of a symposium of these topics held at the Oxford Meeting of the Seventh International Congress of Psychology, 30th July 1923. The papers given by E. D. Adrian, H. Head and C. S. Myers were published in

not inherited as a unit, *i.e.* in an all or none manner, there is adequate reliable evidence to show that the amount of resemblance in intelligence is closely related to the genetic relationship of individuals. Intelligence does develop, but only along a level of pre-determined potentiality, that is, to a degree commensurate with the inborn capacity for development.

Intelligence is concerned with the higher mental processes. It is very slightly related to such characteristics as physical attributes or sensory acuity. It is manifested mainly in the ability to perceive relationships and to apply these relationships to new or similar situations. For example, in such an educational task as solving a simple mental arithmetic problem of the type :

> " Tom's father brought home some marbles of which he gave $\frac{1}{4}$ to Tom and the remainder to his brother. Tom received 11 marbles. How many did his brother get ? "

there are many relationships to perceive. To understand the problem the pupil must read the sentences intelligently and he must perceive relationships between the abstract numbers and their meaning. Further, he must understand the relationships between the three major fundaments, $\frac{1}{4}$, $\frac{3}{4}$, and 11, realising that $\frac{1}{4} : \frac{3}{4}$ as 11 : ? ; he must educe the fourth term which bears the same relationship to the third as the second bears to the first. A normally intelligent child, with the necessary experience of the fractions involved and the multiplication required, rarely fails to see the relationships and to make the correct step. The very dull child rarely succeeds with such abstract relational thought, although he might, with concrete material, see that there

vol. xiv, part 2, of the *British Journal of Psychology*, October 1923, " The Conception of Nervous and Mental Energy," pp. 121-152. Myers, in discussing the contributions of Adrian and Head and at the same time giving his own interpretation of the problem, says : " I see no reason why we should not throughout identify central nervous energy with mental energy—Dr Head's ' physiological vigilance ' with the psychologist's ' mental activity.' I find no difficulty in supposing that the ' psycho-neural ' energy as I would term central nervous energy assumes a more distinctly mental form as higher, wider and more plastic areas are brought into function " (p. 152).

are four quarters in a whole and that three quarters are three times as much as one quarter ; or he might even multiply 11 by 3 correctly ; but all such operations would be isolated mental activities.

It follows that the more complex the mental process the more closely is it related to a high level of general intelligence. In other words we find that a greater amount of general intelligence is required as the relations, in a situation or problem, become more difficult, increase in number, and bear more relationships to one another. It is the difference in this ability to understand quickly and correctly the underlying relationships in school subjects that distinguishes intelligent from dull pupils.

Measurement of General Intelligence

The technique of intelligence testing is based on results from extensive and varied researches into the nature of intelligence and its manifestation. In the present review of individual differences it is neither relevant nor necessary to enter into details concerning intelligence tests, their construction, types, uses and limitations.[1] It is sufficient to note that at present they provide our most accurate means of judging general intelligence, and that they are universally accepted in the best modern educational practice. Brief reference may, however, be made to a few facts of primary importance relating to the use of intelligence tests in a study of backwardness. In the first place it is vital to realise that, although the tests tend to measure the nature of general intellectual ability as distinct from the level of acquired knowledge, they do not reveal inborn level or potentiality except in so far as it has been realised by environmental opportunity in material similar to that used for testing. Scholastic success and emotional experiences in particular fields are factors of no little importance.

In the second place it must be noted that some tests are

[1] A readable and useful summary of these matters is to be found in *Intelligence and Intelligence Tests*, p. 96, by R. Knight (Methuen, 1933). A fuller treatment of the same topics is made in *Intelligence, Its Manifestations and Measurement*, by Paul L. Boynton (D. Appleton & Co., London, 1935).

preponderantly verbal in bias. With some children, particularly backward ones, this verbal element prevents a reliable assessment of intellectual powers, which may be manifested more truly when the test material is non-verbal in form and consists of drawings or diagrams or concrete objects. To date, insufficient attention has been paid, especially in intelligence tests, to the different emotional attitudes aroused in different children with test items and test situations.

Lastly, one should not place too much emphasis on the result of a single intelligence test. In most instances, where an accurate assessment is needed as in case study work, it is advisable to supplement the result from a group test with that from an individual test or *vice versa*, or with another group test given a little later.

Specific Intellectual Abilities

Under this heading are included those major intellectual qualities which are important in school progress—logical reasoning, memory, imagination, perceptual power and attention. Although separate note is taken of them, the fact must not be overlooked that these are not in any way separately functioning aspects of mental power. It is in fact difficult to determine in some instances, for example in reasoning, how the specific process differs from the manifestation of general intelligence. Nor should these specific intellectual capacities be regarded in the same light as the old "faculties." These were independent intellectual entities that were supposed to have a separate organic basis, which absolutely determined success or failure in certain operations and which could be controlled in somewhat the same way as water from a tap. No modern psychologist believes that there is any specifically functioning mental power such as reasoning or memory. The names simply indicate processes in which the intellectual or cognitive aspects of mental life are blended in different degrees. This interpretation almost indicates that specific intellectual capacities are convenient ways of classifying

intellectual behaviour in different situations, an interpretation which is still more suggestive when we remember that specific intellectual qualities can be described in terms of the material used. For example, there is no single intellectual state which can be called memory ; efficiency of memory varies with the material—there is memory for figures, memory for places, memory for explanations, memory for names, and so on ; ability in these different fields is dependent upon emotional accompaniments and temperamental attitudes. Thus, whereas one person who labours under an inferiority attitude and is much influenced by praise or blame from other people and by what they consider as right or wrong, almost invariably remembers names and faces ; another who is self-opinionated, independent and with a logical attitude towards life forgets faces and names but always remembers explanations and methods. In addition to personal temperamental factors in the manifestation of intellectual abilities, note must be taken of the varying ways in which material is used in different intellectual abilities. Thus in imagination there is creation or original adaptations from older ideas and patterns, while in memory there is simply a reproduction, in almost the same form, of previously presented material.

Teachers are realising this differentiation. The older viewpoint that all dull pupils were as efficient at handwork as normal pupils has been modified. These pupils are certainly better at handwork than they are at more academic and abstract studies, but their success is only a relative one. They are in the main still below normal standards in creative handwork, though they may rise to mediocrity in imitative handwork. The two forms demand different amounts of general intellectual ability.

Finally, the influence of emotional attitudes on intellectual states excludes the possibility of any such mental entity as a specific intellectual quality. Thus attention, which was once regarded as a manifestation of the intellectual power of an individual, is now known to be greatly influenced by emotional conditions. Intensity

and continuity of intellectual power used in attending is conditioned by intensity of the stimulus—often having an emotional basis—and the emotional stability of the pupil attending.

Measurement of Specific Intellectual Capacities

From the foregoing discussion it will be inferred that, in considering the specific intellectual capacities of pupils who are backward in school work, it is of greater importance to note, as far as possible, the emotional conditions that are hindering memorising or reasoning or accurate perception than to try to assess the power of memory, reasoning or perception as such. Tests have been devised which purport to measure specific intellectual capacities in an abstract way. Reproduction of nonsense syllables is for example deemed to be an indication of proficiency in mechanical memory. It may follow that the pupil who does poorly in memorising nonsense syllables will fail with history dates or arithmetic tables, but, in general, inferences about special intellectual qualities are best limited to particular media. A pupil who reasons badly with figures may do excellently with history facts. Occasionally one wishes to estimate the strength of a specific intellectual capacity apart from the medium in which a pupil has been failing. Here the test material should be similar to that of the school subject in which the pupil is backward, but selected with sufficient care to exclude possible inhibiting emotional influences. Such a test sometimes reveals intellectual weaknesses or misunderstandings which are not detected in ordinary classroom work. Illustrative of this are very simple diagnostic word tests for backward readers and spellers.

Tests for specific intellectual capacities can be profitably supplemented by careful observation.

Acquired Attainments and their Measurement

Consideration of the intellectual characteristics that contribute towards the formation of individual differences would be incomplete without reference to the acquired

aspects, namely, the educational and cultural levels reached by the child. Here again the accurate assessment of acquired attainments is best accomplished by objective tests.[1] Standardised scholastic tests and measures of general knowledge yield, in the main, reliable data with regard to the levels reached by the pupil in the various school subjects. From the norms or averages for the various age groups a pupil's mental age can be calculated for each subject. Knowledge of individual differences will then enable us to judge how far the mental ages obtained by the pupil in the different scholastic scales represent possible maxima. Naturally a comparison of mental age for the subject with mental age for general intelligence will give some indication of the efficiency of learning effort. But as I have indicated elsewhere [2] this comparison gives only a rough approximation of rate of progress, and, unless modified, may provide, in some instances, misleading information. Intellectual ability, general and specific, is not the sole determinant of school progress. In addition to the obvious influences of experience and practice an extremely important factor in learning is emotional attitude. To these more difficult and complex aspects of mental life consideration will now be given.

[1] See *Mental and Scholastic Tests*, C. Burt (P. S. King & Son, 1921). This volume contains a useful battery of scholastic tests for use in English schools. Also *The New Examiner*, P. B. Ballard (University of London Press, 1934). There is, however, a very urgent need for comparable sets of attainment tests in the primary subjects with up-to-date norms derived from extensive numbers. The most recent attempts are the *Kelvin Tests*, C. M. Fleming (Robert Gibson & Sons), (Measures in reading, spelling, arithmetic, from 1835 children in 38 schools, town and country); *The Standardisation of a Graded Word Reading Test*, P. E. Vernon (Publication of the Scottish Council for Research in Education, XII. University of London Press). This is a restandardisation (and extension for older children) for Scottish schools of Burt's *Graded Reading Test*. See also *The Psychology and Teaching of Reading*, pp. 92-3, F. J. Schonell (Oliver and Boyd Ltd.), for a new graded word reading test.

See *The Use and Interpretation of Educational Tests*, A. H. Green and A. N. Jorgensen (Longmans, Green & Co., 1929). In addition to chapters on the treatment of results from standardised tests, this book contains a classified list of educational tests and publishers.

[2] *The Education of Backward Children*, chaps. iii to vi. Reprint from *The Year Book of Education, 1936*. Published by The Institute of Education and Evans Bros., London.

CHAPTER II

INDIVIDUAL DIFFERENCES AND THEIR BEARING ON BACKWARDNESS

B. Emotional Tendencies[1]

Character and Temperament

When we first make contact with pupils in a classroom what we notice most is not their intellectual powers but the different ways in which they react to us, to what we say, to what we ask them to do. Further contact provides fuller information on this aspect of mental life ; we notice how the pupils react towards one another, what attitudes they take up towards success and failure, praise and censure ; what attitudes they adopt during individual and group activities. We discover that one child is noisy, boisterous and unduly self-assertive, another is quiet but quick to seize a chance of self-display, a third is inclined to be sullen, suspicious and shy of social contact, a fourth is nervous and apprehensive, while a fifth is buoyant, joyous and eager to please almost to the point of extreme suggestibility. So with all the pupils, we realise that they differ markedly in their attitudes towards persons, tasks and experiences. Continuous observation of them in a variety of situations, both scholastic and social, forces us to admit that some scholars are better equipped for success in life than others, irrespective of intellectual powers. There are some who set about their work in a businesslike, persistent manner, while others skim the surface of it and are soon on the lookout for a new activity. From day to day and week to week we realise how much our pupils differ in such characteristics as stability, thoroughness, persistence and self-confidence. We begin to feel that teaching methods are effective and discipline is natural in so far as we know the scholars' emotional equipments and temperaments.

[1] Students of child psychology should supplement this chapter by reading Prof. C. W. Valentine's excellent book *The Psychology of Early Childhood* (Methven, 1942).

What, then, is the basis of this all-important aspect of individual differences? To what extent are the variations due to inborn factors or to environmental influences? These questions deal with the most perplexing part of the study of human behaviour, a brief consideration of which will be pertinent to our later study of backward pupils.

Instincts and Emotions

It has been assumed that the inborn emotional equipment of an individual consists of a number of impulses known as instincts. These inborn impulses are manifested when the appropriate stimulus is presented, while their expression is usually accompanied by an emotional state.

From the outset I make no excuse for using the term "instinct." Although it is the most abused term in psychological literature, it is still worthy of employment to denote those innate impulses or drives that characterise human behaviour. Whatever evidence is offered or experiments are performed, whatever information is gleaned from the reactions of the new-born babe or from the tribal life of the primitive savage, we still find that a considerable amount of human behaviour is stimulated by inborn physiological mechanisms common to all members of the race. All human beings show, at all stages of their lives, fear. All are roused to assert themselves in different degrees. Various experiences cause them to exhibit anger, while at other times they are stimulated to show disgust, curiosity, sexual excitement or primitive sympathy. The forces or factors that promote these reactions can be described as instincts, while the behaviour can be called instinctive behaviour. We may agree with those who criticise the term instinct and what it was originally meant to imply and wish to call these inborn impulses by other names; but from the viewpoint of the teacher it does not matter what these forces are called, so long as he is aware of their influence in school life. The term instinct should probably refer to

particular types of inborn psychological mechanisms,[1] but provided we recognise that they are innate and that they subserve important complex modes of behaviour, as distinct from the relatively simple reactions known as reflexes, then their general characteristics can be accepted. Those of the behaviorist frame of mind still require some term that will convey the idea of an innate impulse, urge, motive or drive which is at the basis of and initiates the particular pattern of behaviour. The experimental work of Watson and his followers has certainly made a contribution to child psychology in emphasising the widespread nature of the different manifestations of behaviour patterns due to different environmental influences, but it has also emphasised the fact that certain inborn impulses are observable from the earliest stages of life.

It is doubtful whether we shall ever correctly classify the impulses on an innate basis. There is the possibility of latency of development with respect to some impulses which only make their appearance in human behaviour when an increase in intelligence allows the stimulating situation to be fully cognised ; this would appear to be the case with the emotional state behind the expression of disgust. This factor of maturation is an important one in the emergence and development of emotional attitudes. For example, "fear arises when we know enough to recognise the potential danger in a stimulus but have not advanced to the point of a complete comprehension and control of the situation.[2]

There is also the possibility put forward by McDougall,[3] and in different form with regard to emotional equipment

[1] For a clear, concise discussion of the relevant issues of this point, see chap. i, *The Mind in Action*, by Campbell Garnet (Contemporary Library of Psychology, 1936). Garnet differentiates between the appetites as innate periodic physiological needs and the instincts as innate occasional psychological needs.

[2] "The Child's Emotions," p. 44, *Proceedings of the Mid-West Conference on Character Development*, February 1930. (The University of Chicago Press, Chicago.)

[3] W. McDougall, *An Outline of Psychology* (Methuen 1925).

by Bridges,[1] of the same instinctive energy serving different modes of expression. In the same way the three basic impulses that Watson [2] observes in the initial stages of development might in later stages bifurcate into separate but related emotional responses. This investigator holds that observation of new-born babies reveals only three primary inborn impulses, namely, fear, rage and love. Fear is the reaction in response to a loud sound or a sudden loss of support. Rage is the reaction of stiffening to any impediment in movement. Love is the expansive reaction to gently patting or stroking of sensitive areas of the skin. It is possible that as life proceeds these basic affective states become differentiated into a number of states, the individual expression of which is each dependent upon the specificity of the situation. For example, fear might become differentiated into anger, jealousy and fear, the particular emotional condition that is exhibited being dependent on the nature and intensity of the stimulus. Evidence of such possibility is found in the fact that practically the same organic changes are found in fear and in anger, yet these states do not appear together or indiscriminately; the cognitive elements in the situation determine the nature of the emotion.

It is not essential that every instinctive action should have its emotional accompaniment. Without doubt there are experiences which, although instinctive, are not charged with emotion. Nor is it possible to distinguish the emotion in all instinctive behaviour. It would seem that in some instances there is merely a vague feeling produced by the organic changes, and we cannot accurately detect the emotional conditions as resembling the usual affective states. In this respect we should be aware of the fact that a pupil may experience emotion in situations where we cannot recognise the condition and he cannot describe it. No one can adequately define the emotional states which

[1] K. M. Bridges, *The Social and Emotional Development of the Pre-School Child* (Kegan Paul, 1931). See for a diagrammatic representation of the genesis of the emotions, p. 209.

[2] J. B. Watson, *Behaviorism*.

accompany curiosity, acquisition or gregariousness. Relative to this point it is all-important to the teacher that he should not only believe that these vaguer emotional states can characterise his pupils, but that they can be impelling motives for additional physical or intellectual expression or subtle barriers to normal adjustment or average achievement.

It is advisable at this point to consider for a moment the nature of an emotion. It is imperative that the teacher should realise that emotions are neither mysterious states nor abnormal conditions. They indicate neither illness nor naughtiness ; they are perfectly normal expressions of human activity which are stimulated and controlled in varying degrees in different children. It would appear that an emotion is a state of organic change accompanied by intellectual awareness of the change. The state may be aroused by an internal stimulus such as a word, an object, a person, or an incident. The emotion is experienced in so far as we are aware of the changed organic condition. Important as the visceral and glandular changes are in emotions, it is the intellectual awareness of the changes which really constitutes the emotion. Changes are continually taking place in the body, but unless the individual is intellectually aware of them in particular situations the states can hardly be classed as emotions.

General Emotionality

Research indicates that the emotional tendencies of an individual are derived from a central emotional fund and that this fund or power functions at different levels in different individuals. In other words, we find that as we have a general factor of general intelligence with respect to cognitive activities, so we have a general factor, known as general emotionality, with respect to affective activities. This interpretation of the emotional differences in individuals receives some support from statistical analyses of emotional assessments and from psycho-analytic investi-

gations. Burt,[1] particularly, has given evidence of the existence of a factor of general emotionality amongst children.

The level of general emotionality appears to result from innate elements, namely, the inborn strengths of the various impulses which prompt emotional expression. No doubt constant excitation of specific instincts and emotions would influence the nature of the general emotional tone of an individual, but for the main part the variations that exist appear to have an innate basis.

The theory has been advanced that variations in general emotionality are a question not of pre-determined strengths and weaknesses in instinctive and emotional equipment but of the degree of control which is exercised over normal instinctive tendencies by virtue of will power.[2] The difficulty which confronts this view is that concerning the exact nature of will power. If we assume that will power is largely a reaction pattern built up through habitual responses in a number of situations, then it would seem that level of general emotionality is an acquired and not an inborn characteristic. If, on the other hand, we regard will power as mainly an inborn trait then variations in general emotionality still remain innate individual differences.

Emotional Characteristics—Possession, Expression and Control

Whatever is at the basis of these variations in emotional strengths, the fact remains that we can distinguish differences in general emotional tone, and at the same time note variations in the strength of particular emotions from individual to individual. Briefly, the chief distinguishable variations appear to be several broadly defined grades of over or under development of general emotionality. Measurement of

[1] "General and Specific Factors underlying the Primary Emotions," *British Association Annual Report*, 1915. See also "The Analysis of Temperament," *British Journal of Medical Psychology*, vol. xvii, part 2, 1938.

[2] *Personality and Will*, Francis A. Aveling (Contemporary Library of Psychology, London, 1931).

emotional characteristics in units, as objective and adequate as those used for assessing general intelligence, is not as yet possible. All we can do is to consider *normality of emotional equipment as being that where a complete range of emotional reactions is possessed and can be adequately expressed but at the same time fully controlled.* Assessments, then, of emotional characteristics must be in terms of possession, expression and control.

In the first place we shall notice that not every human being possesses all the primary and secondary emotions.[1] There are low grade intellectual defectives whose actions show that they are never prompted by such impulses as primitive sympathy, disgust, elation or humility. These individuals are not only intellectually defective but *emotionally defective* as well.

It should not for a moment be assumed that there is any absolute relationship between general intelligence and emotional stability. In fact, the correlation ratio between the two characteristics is little better than +0·35. There are numerous examples of mental defectives who are moderately well stabilised. Quite recently I examined a boy aged thirteen years who had an I.Q. of 37, but who was relatively stable in the expression of instinctive and emotional traits and who revealed an appreciable degree of development in common moral and social matters.

Amongst bright children we find not a few whose obvious instability handicaps them in school progress and character formation. Interesting evidence on this point is given by Hughes in some recent research.[2]

[1] For a list of these and a discussion of the stimuli appropriate to them and of the actions arising from the impulses, see *An Outline of Psychology*, W. McDougall (London, 1926).

[2] "Discrepancies between the Results of Intelligence Tests and Entrance Examinations to Secondary Schools." *The British Journal of Educational Psychology*, vol. iv, part iii, November 1934: Interesting examples of discrepancy between emotional stability and intelligence are revealed in cases such as:

Mary, 76th in Intelligence Test, 389th in Scholarship examination.
James, 32nd ,, ,, 643rd ,, ,, ,,

The reverse type where stability of character, as shown by persistence, thoroughness and conscientiousness in school work, has triumphed over mediocre intelligence, is also discussed.

There are, too, emotional defectives whose intellectual powers are normal or nearly so. These are individuals whose conduct is continually characterised by moral lapses and anti-social outbursts. They lie and steal with impunity, indulge in sexual malpractices, exhibit fear, anger and greed to a pronounced degree, and are deficient in such emotional attitudes as primitive sympathy, humility, tender emotion and disgust.

By the term "emotional defect" it is not inferred that such a condition is necessarily wholly inborn; emotional deficiency is also due to defective development in control and in expression of emotional states. Doubtless there is some inborn instability present from birth, but the likelihood of adverse environmental influences which have caused the development of such pronounced anti-social tendencies should not be overlooked. Some cases of emotional deficiency have been labelled as moral imbeciles.[1] This term is highly misleading, for it suggests in the use of the words "moral" and "imbecile" that there is some inborn immorality in these children.

The psycho-analytic viewpoint is helpful in this connection, for it attributes so-called moral imbecility to an intensely severe development of the super-ego.[2] In other words, a child reaches no real conciliation between the internal standards set up and the external attitudes of parents and other adults, and as a result will brook no interference whatsoever in the expression of his instinctive impulses. Although psycho-analytic treatment assists these children it by no means cures them. The percentage of this type amongst the population is not greater than 0·02.

Next in grade of emotional variation are the *unstable*, whose conduct is impulsive, but not so pronounced in degree as that of the "emotional defective." The unstable person is one whose instinctive and emotional life lacks consistency. He is often weak in such mental characteristics as con-

[1] See particularly *Mental Deficiency* (Fifth Edition), A. F. Tredgold pp. 337-363 (Baillière, Tindall & Cox, 1929).

[2] *The Psycho-Analysis of Children*, Melanie Klein (Hogarth Press, 1932).

centration, persistence, or independence. The school work of the unstable child is characterised by inequality of output, unfinished tasks and careless inaccuracies.

Amongst a representative sample of the population there appears to be about 8 to 10 per cent. of unstable members.

Lastly, an additional variation that we find in this field of individual differences is *emotional apathy*. Emotionally apathetic persons are those whose emotional energy appears to be deficient. Their conduct is characterised by a slowness and sameness that makes them uninteresting and uninspired beings. They show reliability but not originality nor initiative. In not a few cases they remain almost insensitive to stimuli that normally arouse full emotional expression.

Thus we have in general emotionality a number of variations, some of which are extreme enough to be called emotional deficiencies. Of these extreme forms there are two, one revealing *emotional weakness in control* and the other showing *weakness in expression*, and in some cases in actual possession of the necessary inborn impulses. The lesser variations known as *instability* are also manifested in *two forms*, *instability of control* and *paucity of expression*. It is desirable that the teacher should take accurate note of the emotional variations that exist amongst his pupils, particularly with regard to over- and under-development of certain instinctive and emotional characteristics, since appropriate lines of conduct can be organised accordingly. Compensatory activities can be encouraged where there is under-development or thwarting of an emotional tendency, while sublimatory influences can be brought to bear where there is superabundant expression of emotional energy of an undesirable kind.

Not only is note of the variations in emotional traits important, but provision for adequate emotional expression through varied activities is necessary if control and correct attitudes are to be built up.

Acquired Aspects of Emotional Equipment

The formation of emotional attitudes is mainly a matter of environmental influences. Just as knowledge, general and special, represents the way in which a person's inborn intellectual power has been realised, so character represents the way in which his inborn emotional impulses have been directed. Character, then, represents the sum total of the moral and social attitudes that have been built up on the inborn emotional basis. It is a compounded resultant of the reactions that have taken place between a person's instincts and emotions and his environment. These reactions, many of which become patterned after a number of years, are known as interests [1] and are the prime determinants of social conduct. Recent research shows that emotional responses are moulded from the earliest years. The original emotional energy is stimulated by objects, persons and situations according to the environment in which the child is placed. Dependent upon the intensity, and amount of satisfaction and repetition that enter into the child's various contacts with his social environment, patterned responses are formed. This linking of the emotional energy to concrete stimuli, to ideas and later even to ideals, is called conditioning. As I am writing, a sixteen months old baby makes a sound and moves quickly away from a thick-leaved picture-book he is handling. Obviously he is afraid. Investigation shows that he has seen on one page a picture of a golliwog which resembles in colour and form a toy mechanical monkey which created marked fear in him some months earlier when it suddenly jumped over on his hand as he was about to touch it. Here we have illustrations of two principles of

[1] Sometimes a differentiation is made between intellectual attitudes or *interests* and emotional attitudes or *sentiments*, but the distinction is obviously an arbitrary and not very valuable one. Intellectual and emotional aspects of mental life are so interrelated that it is difficult to distinguish between them. Another division often observed is that between a conscious emotional attitude or *sentiment* and an unconscious one or *complex*. Here again determination of the line of demarcation between conscious and unconscious motives is a difficult matter.

emotional attitude formation—the movement of the mechanical monkey produced a conditioned fear reaction which had been extended to an object (in this case a picture) of similar shape and colour ; that is, a substitute stimulus had been developed. A picture of a golliwog bore sufficient resemblance to the original toy monkey to initiate a fear response. Now, the ramifications that can be set up between original stimuli and original responses and substitute stimuli and substitute responses are numerous. We find that the child's behaviour both in school and at home is largely a matter of conditioned attitudes. What he likes to do out of school, what he likes to eat, when and where he can go to sleep, what he regards as right and wrong, his ideas of honesty and cleanliness—these and many more are examples of conditioning. So, too, his attitudes within the school—his interest and efficiency in certain subjects, his reactions to his teacher, his behaviour towards his fellows result from the early canalising of emotional energy.

We have, however, to remember three things with regard to conditioning. In the *first* place, it is apparent from foregoing paragraphs that conditioning of inborn impulses with the further development of substitute stimuli and substitute reactions is purely an individual matter. The inborn impulses are the property of all individuals, but the stimuli that arouse them result purely from specific environmental influences. Thus one child will be afraid of a monkey, but not of a dog ; with another the reverse will be the case. Some children continue to fear the dark or a thunderstorm, while others become perfectly composed during these experiences. A pupil will show hostility and unfriendliness towards one teacher but absolute devotion towards another. And so with each emotional impulse, although there may be stages of development during which there is similarity of response in all children of about the same age, yet we find that specific stimuli to the response differ markedly from child to child.

In the *second* place, the association between the condi-

tioned responses and the biological states is sometimes made half unconsciously, so that, not infrequently, after repetition of the response, awareness of the stimulus or causal relation disappears from consciousness and the attitude becomes an unconscious mechanism. The individual then acts in a particular way, but it is not the result of any conscious consideration of the matter. As development proceeds, not a little conduct, both moral and social, has this unconscious basis.

A *third* point, and an important one with regard to conditioning, is that undesirable emotional attitudes may be broken down if viewed in the right light and if treated before they become too firmly established. Attitudes that may appear insignificant, for example childish fears, attitudes that may appear amusing, for example childish jealousies, attitudes that may seem clever, for example subtle ways of avoiding the issue, should be viewed in their correct perspective from the outset. Understanding parents and teachers can be important participants in reconditioning or readjustment just as much as in conditioning. Removal of the stimulus for a time or associating the stimulus with another emotional condition will frequently have the effect of disrupting the initial stimulus-response connection.

Individual Differences in Development of Character

Development of character follows in the main certain broadly marked stages. The ways in which persons, objects and situations influence children at successive stages of development are fairly well known, but uniformity in this respect from individual to individual is by no means common. Differences in intellectual and emotional equipment, and variations in home and school influences, make for wide differences at similar stages of character development. Initially the child's attitude is directed towards concrete, particular persons, objects and situations; later these attitudes are expanded to include concrete, general stimuli, and the third stage of development, when abstract

social and moral attitudes are consolidated, appears relatively late, in some children very late.[1]

"In infancy and the first year or two after it the child is undoubtedly oriented mainly to adults (parents). They are the sources of his joy and his safety. Other children, more especially younger ones, are at first felt to be intruders whose presence stirs hostile wishes because of the dread of exclusion and the loss of love. Friendly feelings are more readily shown towards older children." [2]

Of the emotions that become centred round adults, that directed towards the mother is at first most marked. Reaction towards the father and to other adults develop gradually. At the beginning of the second year there is evidence of a sentiment associated with particular toys; the child pretends to put a favourite doll to sleep, he proffers food to a toy dog, while at meal times he gives evidence of attachment to an inanimate object when he is successfully tided over feeding difficulties by being allowed to hold a favourite book or talk to a toy animal. Later comes the all-important socialising influence of other children. In this direction the school, the teacher and the child's school companions play a vital part in character development.

A detailed consideration of the various ways in which complete character development proceeds in the earlier years is not possible in this brief review of individual differences. The entire problem has been skilfully unravelled by Dr. Isaacs—the primary ego-centric attitudes of young children, the hostility and aggression that is exhibited in the expression of power, possession and rivalry

[1] The first two stages of development which concern concrete stimuli have been studied; the emergence of stimuli and the growth of reactions, interests and attitudes up to the sixth or seventh year of life have been carefully observed, and our knowledge of character formation during these years has proved extremely useful. Later development has, however, been comparatively neglected. We know little about character formation in later childhood and comparatively nothing about adolescent years. A study designed to remedy this deficiency somehwat has recently been completed by Margaret M. Phillips. See *The Education of the Emotions* (Allen and Unwin, 1937).

[2] *Social Development in Young Children*, p. 233, S. Isaacs (Routledge & Co., 1933). See for short practical surveys *The Nursery Years*, S. Isaacs (Routledge), *The Psychological Aspects of Child Development*, S. Isaacs (Evans Bros.); *The Mothering of Young Children*, G. E. Chesters (Faber & Faber).

and the attitudes of love and hate that are moulded through individual and group contacts with other children are discussed in detail in her published research, *Social Development in Young Children.*

It will, however, be of value for our particular problem of specific backwardness if we consider how the teacher influences the growth of character in his pupils. In the first place his influence is a personal one. Next to parents the teacher is, with children in the infant and junior schools, the most important adult in their lives. Through sympathy, suggestion and imitation, pupils are led consciously and unconsciously to strengthen and even to alter some of their attitudes towards social and moral matters. Sometimes it is sympathetic contact, at other times a subtler suggestive influence, that moulds their attitudes towards questions of justice, honesty, keeping one's promise, agreement with what is right and deprecation of what is wrong, unselfishness and helping weaker and less fortunate members. What the teacher says and does with regard to all such matters has marked influence on pupils, particularly in the earlier stages of their school careers.

Furthermore, the teacher has partial control of one of the most vital forces in the development of personality, namely the use of activity, including play. In school the child can be a passive member of a group carrying out class lessons in a uniform, orthodox manner, or he can be an active participant in academic activities where rhythmic work, freedom of movement, playway methods and handwork are liberally catered for. An early and insistent need of all children is expression. From the phantasy life of the pre-school stages there is a gradual emancipation if plenty of opportunity for expression is provided.[1] Dramatisation, constructive work, drawing, painting, story-telling, music and associated activities all enable the child to develop normally, not only on the intellectual side but on the

[1] Not that phantasy should be regarded as in any way a sign of regression or immaturity. It has a very definite place in mental development and is a natural preparation for later life. For a discussion of phantasy in young children, see *Imagination in Early Childhood* by Ruth Griffiths (Kegan Paul, 1934).

emotional side as well. Activity and expression produce that psychic equilibrium, that ease and mental balance so necessary for later school progress. In this respect we might take separate note of the extreme importance of play.[1] To the end of the junior school course it remains one of the most potent factors in character development.

Of importance, too, is the attitude of teachers and of pupils towards each pupil. Early in his school career the child is influenced by the opinions of those in authority and those who are his equals. The attitude of the former he readily interprets from their words and gestures of pleasure or displeasure, praise or blame. He soon learns also to compare his own physical and mental capacities with those of his school-fellows. Children are frank, perhaps a little too frank, in expressing their opinions of others. Without any consideration for the feelings of the individual they will openly tell him of his shortcomings.

As the child begins to understand fully the attitude of others towards him, he forms mental pictures of himself based on their opinions and ideas of him. It is these mental pictures which are instrumental in moulding his "self regarding sentiment." What he thinks of himself, his attainments and his capacities is largely the result of accepting what others think of him. The child who is continually repressed and scolded, who at one time is told he is stupid, at another wicked, soon begins to form a lowly opinion of himself; on the other hand, the child who is always praised, who is rarely corrected, and from whom opposition is largely removed, grows up with an exalted idea of himself and his powers.

The school plays an important part in moulding a pupil's idea of himself, for it is in school that the pupil is faced with many different tasks in competition with his equals. The teacher's attitude towards the pupil and towards his results is a determining factor in maintenance of self-esteem

[1] For an interesting discussion of the values of play, see *Play in Childhood* by Margaret Lowenfeld (Gollancz, 1935), and *Play in the Infant School*, by E. M. Boyce (Methuen, 1938).

and self-confidence. Naturally, results are dependent upon the difficulty of the tasks. In this respect, the methods by which material is presented to pupils and the age at which they are expected to master it has a bearing on the growth of character. It is no exaggeration to say that in early school life the attitudes a pupil forms towards his school work are more important than the knowledge he acquires.

The main emotional incentives which influence progress in school are those of success, satisfaction and interest. There is little doubt that the backwardness of some pupils arises from a too early introduction to certain tasks, as a result of which these activities appear both difficult and meaningless. In such cases the children are neither interested nor successful in their work, and they tend to view school as a place where they are asked to do difficult and distasteful things. This is particularly so in the early stages of reading and arithmetic, in which subjects one finds children whose work shows unmistakable signs of repression and inhibition due to an acquaintance with abstractions before clear ideas were gained in concrete situations. It is obviously both unsound and unjust to attempt formal reading and number with pupils who are not mentally ready for it. What we desire above all else is a healthy attitude towards school based on work suited to the child's capabilities and interests. Yet one finds numerous cases of children with a mental age of barely three and a half years—their chronological age may be five or even six years—attempting formal work in both reading and arithmetic.

It would be a most beneficial procedure if all children entering the infant school were examined to discover whether they were mentally ready to commence formal work in the basic subjects. In not a few cases the gain in character development and the subsequent gain in educational progress that accrued from a postponement of formal teaching would amply repay the time taken in preliminary testing.

Not only does a wise selection of method and material

for particular stages of mental growth aid in the natural development of the self-regarding sentiment, but personal qualities of the teacher count for much. The teacher's attitude towards the pupil's ability and the results he obtains are equally as important as actual pedagogical procedures. In an understanding atmosphere which contains a liberal measure of praise and encouragement, the child is led to gain confidence and self-reliant independence which serve him well in later school work. Where discipline is harsh, where there is sarcasm or undue censure, perhaps even corporal punishment, and where insufficient credit is given for genuine attempts at tasks, there is the possibility that barriers are raised to normal emotional stabilisation.

The attitude that the teacher takes towards undesirable behaviour is also of extreme importance to the child's emotional development. What teachers consider undesirable behaviour and the attitudes they take towards various child problems may need, in some cases, modification. Wickman [1] has shown that, in general, there is a tendency to treat the symptoms of the maladjustment rather than to investigate the underlying causal factors of the behaviour disorder. And not infrequently it is the shortcomings of the active assertive child—his rudeness, disobedience, truancy, boisterous conduct—that are viewed as much more serious than some of the maladjustments of the quiet, nervous, apprehensive child—his fear of criticism, solitariness, unsociability. In reality it is the latter type of child whose condition need cause us most concern.

Furthermore, there are instances where teachers project their own problems into class situations. Their attitude towards particular pupils and classroom conditions is unconsciously influenced by their own unhealthy emotional attitudes. Possibly the time is not far distant when a thorough course in mental hygiene and even a period of psycho-analysis will be considered one of the aspects of a teacher's training.

[1] *Children's Behavior and Teacher's Attitudes.* E. K. Wickman. (Commonwealth Fund Publications. New York, 1932.)

Measurement of Character and Temperament

It will be apparent from the foregoing consideration of emotional attitudes that measurement in this field of individual differences will be a difficult matter. The fact that both organic changes and intellectual processes enter into most aspects of emotional life, and that stimuli which arouse the different emotional attitudes differ from individual to individual explains why so few reliable tests have been formulated. Yet, as we have shown, an assessment of general emotional stability and of specific character traits is of inestimable value for practical school purposes.

Along what lines have attempts been made to construct tests of temperament and character? In answer to this question it will be useful to note that a picture of the personality of an individual and of the various traits that characterise him is framed in an ordinary way from four sources :

(1) his features and facial expressions, his build, poses, gestures, speech, dress and manner ;
(2) his behaviour under specific circumstances and any facts that we can elicit about his past history ;
(3) his introspections, about his experiences, feelings and desires ;
(4) the opinions of other people who have told us about him, people who are acquainted with him in his various walks of life.[1]

One group of tests that is extensively used, namely, the *subjective tests*, is simply a refined modification of these various sources of information. Examples of these are the trait-rating scales for character and the attitude scales. The obvious disadvantages of such measures is their subjectivity. Different judges provide somewhat different estimates of the various traits of one and the same individual, while self ratings and expression of opinions may differ from actions and private opinions.

[1] *The Testing of Intelligence*, chap. xi, by P. E. Vernon, p. 115.

In addition to these personal judgments of qualities of behaviour we have *objective tests*, which at least reduce the subjective element but not infrequently replace it by elements which are too simplified and mechanised. The isolated test items of the objective test tends not infrequently to neglect the important aspects of the total situation in all social and ethical traits. Illustrative of the objective test would be the psycho-galvanometer (a chemical approach), perseveration tests (a motor approach), and the tests of the Character Education Enquiry [1] and of Hartshorne and May,[2] in which use was made of life situations to estimate self-control, dishonesty-honesty, persistence.

Voelker's tests of trustworthiness are examples of the objective method, employing miniature situations, for estimating character and personality traits. The following tests appear in the battery devised by Voelker.[3]

1. Willingness to accept undeserved credit (overstatement test).
2. Suggestibility, as indicated by the M and N test in the Downey will-temperament series.
3. Willingness to accept help in solving puzzles after promising not to accept help.
4. Willingness to " peep " when placed on one's honour to perform a task with the eyes closed.
5. Willingness to cheat in scoring one's own responses to a test.

Some of these tests and attitude scales, even though their validity coefficients are not high, are extremely suggestive, and indicate that progress has been made in temperament and character testing.

A detailed discussion of the actual nature of all the

[1] *Character Education Enquiry* (Association Press, New York, 1930).

[2] H. Hartshorne and M. A. May. Three Volumes. *Studies in Deceit, Studies in Service and Self-Control, Studies in the Organisation of Character* (Macmillan & Co., New York, 1928-30).

[3] P. F. Voelker, *The Functions of Ideals and Attitudes in Social Education* (Teachers' College, New York, 1921).

various subjective and objective [1] tests would not be profitable in our present survey of individual differences, but reference to the best method by which the teacher can provide fairly satisfactory estimates of character and temperament is most pertinent.

The Rating Scale

Without doubt the rating scale is the most practical way that the teacher can assess the emotional attitudes of his pupils.[2]

For intensive individual studies, such as those made in cases of delinquency, backwardness, nervous disorder or difficulties in home adjustment, it is advantageous to use any reliable objective tests of temperamental traits which are pertinent to the case under consideration.

For classroom conditions, with the majority of scholars the rating scale provides sufficient suitable information. Certainly it has the possible disadvantage of personal bias, but as estimation of temperament and character will always remain to some extent an art as well as a science, we should consider the precautions to be adopted to minimise the subjective elements where error might arise. Usually a trait, such as persistence or suggestibility, is rated in five different degrees. These are designated by the letters *a*, *b*, *c*, *d*, *e*. Thus *c* indicates an average level in the trait, while *b* stands for a degree above average, and *a* for one much above average; similarly, *d* stands for a degree below average and *e* for one much below average. Now assessments on such a scale can be rendered more reliable if we remember the following six points.

[1] For a full description of Tests of Temperament and Character see chap. xi by P. E. Vernon in *The Testing of Intelligence*. Reprints from the *Year Book of Education, 1935* (Evans Bros. Ltd.).

[2] I should like to acknowledge the very useful suggestions I have received from time to time from Professor H. R. Hamley, Dr Susan Isaacs, Professor H. Field and Professor R. A. C. Oliver on the assessment of character and temperament. See *The Educational Guidance of the School Child* (Evans Bros.). This contains a detailed description of a scheme for pupils' record cards as worked out in Wiltshire, and is a very useful guide to teachers and students engaged in child study work.

In the *first* place, we should be sure that we have a clear conception of the traits to be rated. A few descriptive phrases relating to the term aids in assuring uniformity in this respect from assessor to assessor, while inclusion of the positive and negative forms of each trait in the rating schedule promotes consistency of connotation; for example:

energetic (positive)	lethargic (negative)
persistent (positive)	soon gives up (negative).

Secondly, a quality such as persistence or suggestibility can obviously vary considerably from individual to individual. If we judged a very large number of individuals for these two traits we would find that the distribution of the five degrees would conform to the following numbers:

a	*b*	*c*	*d*	*e*
5%	25%	40%	25%	5%

Although smaller groups of ratings might deviate considerably from these figures, yet they will serve as a rough guide, if we remember that a *c* rating occurs approximately 40 times in 100, while *b* and *d* ratings occur 25 times in 100 and *a* and *e* only 5 times.

Thirdly, in rating the individual children we can increase the reliability of our estimate if we bear in mind five pupils typical of the five degrees of the scale for the trait under consideration.

Fourthly, we should endeavour to get an aggregate assessment of the trait as exhibited by the pupil in a number of relevant situations. The possibility that the pupil may show marked persistence in one situation and not in another is always a potential weakness in the trait-rating scale; for example, a boy may show *b* degree of persistence in handwork but *d* in written composition. Such a variation is likely and should be noted. Furthermore, as Valentine [1] has noted, there may be specificity in certain

[1] C. W. Valentine, "The Specific Nature of Temperament Traits and of Suggested Report Form," *The British Journal of Educational Psychology*, February 1940.

traits, such as sociability, aggressiveness, sympathy, as the age range of individuals differs in different situations. For example, a boy may show extreme aggressiveness towards men but not towards children ; a girl may be extremely sociable with younger children but unsociable in her contacts with older children. What we should avoid is placing too much reliance on a single estimate where a special set of circumstances might be operating.

Fifthly, we should obtain estimates from a number of judges, if possible, in order to minimise personal factors or particular influences which operate with a single assessor.

Sixthly, home estimates even if they are biassed in one or other direction often yield useful supplementary information when the character and temperament of pupils are being considered.[1]

The value of carefully kept school records for providing information on the emotional life of the pupil is obvious.

C. Physical Conditions

Progress in school is a matter of physical fitness as well as mental fitness. Intellectual and emotional expression are intimately related to physical conditions, both permanent and temporary. Moods and motives, aptitudes and attitudes, are largely conditioned by a continuously changing physical background.

For the sake of convenience we might group the physical aspects of a child's life under three headings :

(*a*) Pre-natal.
(*b*) Intra-uterine.
(*c*) Post-natal.

Under pre-natal aspects we would include the inborn and inherited constitutional standard that has been determined by the standard of the child's parents and

[1] For helpful information on rating of traits of character and temperament, see *A Study in Vocational Guidance*, H.M.S.O., 1926, pp. 57-72, and *Genetic Studies of Genius*, vol. i, chap. xviii, M. Terman and others (Harrap, 1926).

ancestors. It is this inborn constitutional level which to some extent determines the child's vitality. In addition we should include here the special strengths and weaknesses which have been passed on in the germ plasm.

Section (*b*) would relate to conditions of health, mental and physical, during the pregnancy of the mother. The possibility of special influences which give rise to traits inborn but not inherited, that is congenital traits, would also be included.

The post-natal aspects of physical life would be concerned with the growth of the child after birth in relation to important external influences such as food, fresh air, sunshine, exercise, sleep, happiness and infection.

We are not particularly concerned with the individual differences that develop during pre-natal and intra-uterine states. It is sufficient to realise that individual differences originate from those states and that a knowledge of the way in which these are brought about is important to those engaged in all branches of child study. Debatable as are the questions of heredity [1] and ante-natal influences,[2] at least an elementary knowledge of the possibilities and problems involved will enrich the attitude of teacher, parent and psychologist towards individual differences in children.

In the physical realm evidence of inherited or congenital characteristics or predispositions is of inestimable value, for positive measures of prevention can then be planned to lessen possible maladjustment. For example, a child who has a predisposition to tubercular infection will probably not contract the infection provided the environment is so ordered as to eliminate fatiguing, sedentary and malnourishing states, and to give sufficient rest, fresh air and rich foods. Similarly, the nervous child will reach a fairly stable adult life if we realise that constitutionally there is

[1] Perhaps the most reliable and readable account of this hereditary aspect is to be found in *The Biological Basis of Human Behaviour*, by H. S. Jennings (Norton, 1930). See also *Child Psychology*, 2nd Ed., chap. ii, M. W. Curti (Longmans, 1938).

[2] See chap. ii, *The Psychology of Infancy*, V. Hazlitt (Methuen & Co., 1933).

the necessity to keep him free from infection and mental conflicts. A healthy happy life will lessen the possibility of future neurasthenia or other neuroses in nervous children.

Post-natal Physical Growth

Teachers are sometimes apt to consider that their duties relate mainly to the mental development of their pupils and that physical care is a separate domain, which is the province of the parent and of the School Medical Service. This attitude is unfortunate, for it should be widely recognised that, as progress in school is conditioned almost as much by physical factors as by mental ones, provision for physical growth should rank equally in the teacher's work with management of mental growth. There certainly has been an improvement in this direction with respect to the more progressive infant and junior schools, but much could be done to introduce a healthier philosophy of physical education into senior and secondary schools. Increased activity and open-air work could be employed in these departments. Particularly in the senior school one of the dominant factors in curriculum formation could be care and study of the human body; at present little consideration is given to these essentials. Frequently physical training lessons are taken in a dusty hall when the air outside is fresh and stimulating. Pupils often sit in stuffy classrooms when the lesson could be taken outside in invigorating sunshine. More trouble is taken over correct spelling than correct posture. While time is wasted in working fractions and decimals that pupils will never need, scanty attention is paid to inculcating pride in physique and imparting a knowledge of the functioning of the body that will be of lasting value to each child as an individual, a citizen and a parent.

Two additional points might be emphasised. We should take into consideration the period of growth through which the child is passing, and the physiological level of *each* child should be borne in mind. With regard to the

first point it is possible that a closer examination of the peculiar problems of the periods of physical growth would influence some of our general educational methods. For example, if we more fully realised that the period of consolidation from the age of seven to that of eleven is the last opportunity for retrieving past errors of development and for preparing for the heavy demands necessitated by rapid growth during the "third springing" up period of puberty,[1] then I am sure still more liberal use of play, rhythmic work and general activity would be made in the junior school.

Important as recognition of periods of growth may be, it is doubly important to remember that there are pronounced individual differences in rate of bodily growth and in rate of maturation of different organs. It is well known, but not infrequently forgotten in our educational methods, that children of the same chronological ages may be of widely different anatomical ages, that is in the stage of physiological development they have reached. Although height and weight are not the best measures of anatomical age, yet the table on p. 42 will show that, in the physical realm, variations are as pronounced as those in the mental realm.

Variations in physiological development have perhaps most significance for the teacher with regard to the actual physical strength of his pupils, their susceptibility to fatigue, and the influence that extreme variations may have upon the development of personality.

In particular, it must be emphasised that the child who is above the average in weight and height is often more

[1] *The Primary School*, Appendix II, "The Anatomical and Physiological Characteristics and Development of Children between the Ages of 7+ and 11+," by H. A. Harris (H.M.S.O., 1931). A similar valuable report on the physical growth of the infant and nursery school child is to be found in *Infant and Nursery Schools*, Appendix II (H.M.S.O., 1933).

Information on physical development and changes in the adolescent is provided in *The Differentiation of the Curricula for the Sexes in Secondary Schools*, Appendix (H.M.S.O., 1921); also in *The Psychology of Adolescence*, chaps. ii and iii, by F. D. Brooks (Harrap). Some useful material is included in *Appraisement of the Child*, p. 203 onwards. White House Conference on Child Health and Protection (The Century Co., 1932).

susceptible to fatigue and more severely handicapped by illness than the normal or even the subnormal child. Lack of interest in his surroundings, retardation in reaction time and low grade of mental retentivity are often seen in this

Variations in the Height and Weight for Boys and Girls between the ages of 7 and 11

Ages.	Height (Inches).		Weight (Pounds).	
	B.	G.	B.	G.
7	41-53	40-53	38-66	36-66
8	42-56	43-55	39-75	41-72
9	45-58	45-57	46-83	45-80
10	47-60	47-60	50-91	50-91
11	49-63	48-62	55-105	53-104

type of child, who tends to become the "loutish" lad of the higher classes of the school. The child who has "overgrown his strength" also affords a difficult problem in this respect. Until the characteristics of mental and physical fatigue are better understood, "forcing" children in school and out of school by "home work" is a grave danger.[1]

Physical Defects

The possibility of abnormal physical variations or defects producing particular personality effects is well known.[2] The child with a pigeon chest or a skeletal defect is sometimes lacking in self-assertion and sociability, while at times myopic and partly deaf pupils tend to develop feelings of timidity and self-pity. Naturally, not every specific defect produces maladjustment in development of personality; the attitude adopted by the child depends

[1] *The Primary School*, Appendix II, p. 248.

[2] See the published works of Alfred Adler, in particular *The Education of Children*. Important as the influence of physical inferiority is upon the development of personality, it would seem at times that Adler's theory is too wide-sweeping. Compensation for physical insufficiency is not as general as he would lead us to believe.

upon the attitude of others and upon the child's general mental and physical condition. Occasionally compensatory conduct is of a subtle kind, so that it takes time to discover the source of the temperamental incongruity or the minor misconduct. Without doubt teachers can do a great deal both by personal attitude and by class organisation for those pupils in whom there is maladjustment through physical insufficiency. In general, such children require liberal praise and frequent success. At times it is simply the individual interest that the teacher takes in the pupil in extra-school activities that builds up the additional confidence and optimism. It is for this reason that extra-curriculum activities, such as class and school duties, visits, lecturettes, hobbies, clubs, are so valuable ; they provide essential nutritives to the development of personality, particularly in children who are poor at sport, who come from impoverished homes, or who labour under apparent physical disabilities.

Apart from the influence that physical defects have upon the development of normal emotional attitudes, they tend at times to reduce efficiency in school work by imposing a handicap in certain intellectual processes. Thus the number of pupils who suffer from visual and auditory defects is considerably greater amongst those backward in reading and spelling than amongst normal spellers and readers. The pupil with septic tonsils and swollen adenoids finds it difficult to concentrate ; his reactions are retarded and his persistence is diminished, so that a quick grasp of directions and explanations is impossible. His output of energy is influenced not only qualitatively but quantitatively.

Of the more general physical handicaps that impede normal progress in school, we might mention three—malnutrition, infection of the central nervous system, and the after-effects of infectious diseases.

Those who doubt the heavy burden that these conditions place upon pupils should make visits to dull and backward classes and to open-air schools. In one senior school class

of thirty-two backward girls, the following physical conditions were present :—

Very nervous, excitable (with stammering or weak hearts in some cases)	3
After-effects of severe operations	4
Severe eye defects	3
Delicate, anæmic, T.B. contacts	8
Malnourished	4

Of all school handicaps with a physical basis, perhaps lowered vitality arising from malnutrition or continued anæmia is the greatest.

Results of a recent investigation [1] into the influence of health on the child's development, in which 409 pupils in different elementary schools were observed continuously for a period of three years, show that "on the whole, variations in physical fitness appeared to be associated with differences in growth and development. Without exception, the children who were in poor health tended to be less proficient in their school work, less skilful on the playground, and less successful in their adjustments to the demands of co-operative group activities than were their healthier classmates. The very healthy children usually exceeded those said to be in fair health by as large amounts as the latter in turn excelled children in poor health. Thus it would seem highly probable that vigorous health during the elementary school years plays a significant rôle in wholesome development."

Ill-nourished and delicate children are unable to put forth that constant effort which results in continued improvement. They tire easily and their concentration flags, so that even when they are having continuous schooling they are unable to obtain maximum value from the instruction. This increased susceptibility to fatigue is also caused by the child suffering from either temporary or permanent nervous instability. It is the pupil's liability to

[1] Carolyn Hoeffer and Martha C. Hardy, "The Rôle of Health in the Child's Development," *The Elementary School Journal*, February 1935, No. 6, vol. xxxv.

fatigue [1] that is at the basis of his variations in school work, his outbursts in emotional control, physical disorders, and at times his minor delinquencies. With regard to the effect of infection, Dr Harris says, " We are not justified in assuming that a child who has been away from school for six weeks is in a fit state to return to school and take up his studies where he left off. The scars of illness in bone suggest that, quite apart from the familiar changes in temperament, such as whimpering and fretfulness, illness may produce an arrest on the processes of ' facilitation ' which is so characteristic of most processes of learning. Mental set-backs of this kind have to be considered, and no attempt should be made to force the young convalescent. Moreover, the reactions of individual children after a prolonged illness are most complex. The fact that one child responds actively and visibly by an expression of grief (*dolor pectoris*) increases the danger of ignoring the other and more important case of the undemonstrative child who suffers in silence much mental anguish (*angor animi*)." [2]

In this brief survey of the relationship between school progress and physical fitness only the most obvious physical conditions have been mentioned. For example, not all the physical factors that are frequently associated with scholastic retardation have been considered.[3] No reference has been made to the early pubertal changes which influence both work and conduct in early adolescence. Nor has the intimate relationship between glandular secretions and differences in temperaments been studied.[4] All such aspects of the connection between physical states and mental states are important, but a careful consideration of them would, in this rapid review of individual differences, demand a disproportionate amount of space. Here the

[1] For useful information on this, see *The Nervous Child at School*, chaps. iii, iv and v. H. C. Cameron (Oxford Medical Publications, 1933).

[2] *The Primary School*, Appendix II, p. 248.

[3] For details see *The Education of Backward Children*. Editor, H. R. Hamley ; chaps. iii to vi by F. J. Schonell. (Evans Bros. and the Institute of Education, London, 1936.)

[4] Suggestive in this respect is *The Glands regulating Personality*, L. Berman. The later sections need reading critically.

aim has been to reveal the necessity of bearing in mind the child's physical condition when judging his academic attainments, and to show that physical variations are wide and numerous, and hence that they should influence methods and materials in somewhat the same way as intellectual and emotional variations do.

D. Environmental Influences

Parental Attitudes

Finally, in an examination of the forces that contribute towards the formation of individual differences in children, it seems imperative that separate note should be taken of the all-pervading influence of parental attitudes. Recognition of these has already entered into the discussion in the formation of character, but, since the attitude of parents is more important than the attitudes of both teachers and companions alike, a review of the main variations will enhance the material of this chapter, for parental influences have a strong bearing on the pupil's progress in school.

Discipline in the home influences discipline in the school. Sometimes the child reacts in the same way in school towards disciplinary measure as he does in the home, while at other times he reacts in quite the opposite manner. Thus, we have a concrete case where the mother spoils the child and the father is looked upon as a punisher of wrong-doing, an attitude which is transferred to the schoolmaster. In another case, a boy of seven who loved his mother, but who felt she was too weak to correct him, was perfect in his father's presence but rough and rude when alone with his mother. At school his treatment of his lady teacher was similar to that accorded to his mother. Where discipline in the home is too lax, where it is too strict or where it is of a vacillating kind, almost invariably there are repercussions in the child's attitude to school tasks. He fails to apply himself satisfactorily either because he has not a body of habits or attitudes to assist him or because he lacks the self-confidence and initiative to make steps for himself.

Home circumstances may materially alter a child's

attitude in school, and investigation shows that there are not a few cases where the child in home and the child in school are two almost different beings. For example, one girl condemned at school as a "scatter-brained, giggling nuisance," for nuisance she was to both teachers and pupils, could, although she was only twelve years of age, conduct the home with amazing efficiency. Cleaning, cooking, and shopping were all done equally well. At home she was as quiet and busy as she was fussy and idle in school, and she had for the past two years been almost a mother to her three younger brothers. School was for her simply a place for light and fanciful expression.

Mental disharmony, lack of love, and even too high standards on the part of the parents, cause children to attempt adjustment within the school. One boy whom I saw recently had been engaged in petty thefts within the home, yet his standard of home life—food, clothes, surroundings and amusements—were on a high level. Investigation showed that his parents had decreed that he should not play with nearby boys from homes of inferior social status. This led to difficulties with other boys and, together with the fact that he was poor at games, caused a feeling of unpopularity towards him. To resuscitate his self-esteem and re-establish himself in the eyes of his companions he began to take coins from the till of his father's shop. This money he spent on these unworthy friends who had called him names and who had generally regarded him in an unfavourable light. He informed me that he gained some satisfaction from seeing his companions court him for his favours or even scramble for the coins he occasionally threw in the air. Naturally his school work was suffering from the various conflicts over his unpopularity, his lying and his stealing. Remedial measures were adopted. The barriers between him and his companions, imposed by his parents, were removed. He joined the Boy Scouts and learned to swim, thus obtaining satisfaction and a feeling of usefulness. He was given pocket money, a certain amount of which he saved for sixpenny tram rides on Saturdays. By

such positive measures the tension at home and in school was relieved, and in consequence his school work improved rapidly.

Sometimes the parent assumes the role of the teacher and proceeds to drill and question the child day after day about school problems. This attitude, except in a few circumstances where the parent has real understanding and teaching ability, fails, and produces difficulties for the child in his school occupations.

Sufficient has been said to indicate that in parental attitudes there is the possibility of producing a vast number of different child attitudes which have a bearing on progress in school. Home and school are so bound up together that it is imperative for teachers and parents to have a real understanding one with the other.[1]

Schedule of Individual Differences

We have now considered the various forces or influences that contribute towards the formation of individual differences in children. It will be seen that these elements which condition individual development are varied and numerous ; some are simple, some are complex, some are inborn, and some are acquired, but all are important for a clear and full understanding of our pupils. We might conveniently summarise these factors in schedule form[2] as follows :

Schedule A

A. *Intellectual Characteristics.*

Inborn. (1) Degree of General Intelligence.
Partly inborn. (3) Specific mental abilities (*e.g.* memory) partly acquired.
Acquired. (2) Level of school attainments and general knowledge.

B. *Emotional Tendencies.*

(4) Instinctive and emotional impulses.
(5) Interests and complexes.

[1] Here the objects of the Home and School Council of Great Britain might be mentioned, see also " The Opinions of Teachers on Parent-Teacher Co-operation, W. D. Wall. *The British Journal of Educational Psychology*, vol. xvii, Part ii, June 1947.

[2] A modified and extended form of a schedule set out by Professor Burt.

C. *Physical Conditions.*

(6) Constitutional standard.
(7) Specific physical advantages or defects (*e.g.* visual and auditory defects).
(8) General physical condition.
(9) Specific physical defects (*e.g.* decayed teeth).

D. *Environmental Influences.*[1]

(10) Within school.
(11) In society.
(12) At home.

As has already been indicated (early in Chapter I), the division of elements into inborn and acquired is to some extent arbitrary. Some of the aspects are by no means mutually exclusive, nor is it possible in concrete cases to differentiate what is inborn from what is acquired. On the other hand, a suggested distinction between inborn and acquired characteristics has in certain instances definite value, as, for example, between inborn level of general intelligence and acquired attainments, between inborn instinctive impulses and the acquired emotional attitudes which are built up. Whatever the exact nature of these elements, they all share in moulding a product, namely personality, which changes from week to week and year to year.

Our study of the nature of individual differences in children has primarily emphasised that all children are individuals, different and distinct in some way from other children. They are individuals each striving for development, expression and power, and their strivings, particularly in school, are conditioned by factors intellectual, emotional and physical. Furthermore, these elements entering into the formation of individual differences are interdependent, so that for maximum mental development we must consider not only intellectual but emotional and physical conditions as well.

[1] Helpful supplementary information on this section is contained in articles by C. L. C. Burns on "Family Maladjustments" and by H. S. Bryan, "Maladjustments in School," in *A Survey of Child Psychiatry* (Oxford Medical Publications, 1939).

CHAPTER III

THE NATURE OF BACKWARDNESS

BEFORE the problem of specific backwardness is considered in detail there should be a clear conception of the nature of backwardness and of the terms employed in denoting its types and degrees. There are many children who lag behind in some aspect of their school work; their attainments in a subject or a part of a subject are not commensurate with the intellectual powers they possess. Few pupils (whether bright, normal or dull) show scholastic achievements which are uniformly on a level with their general intelligence, for it is obvious that there are some influences which hinder a child in one activity and help him in another. Research has shown that there are, for example, intelligent children whose arithmetic is uncertain, or whose spelling is weak, whose results in English composition are inferior, or whose success in handwork is below that in other subjects. Such variations from subject to subject are the rule rather than the exception.

If we compare estimates of intelligence—however obtained—with scholastic achievements it is not surprising that the degree of relationship is far from absolute. There are not a few cases of bright children who fare badly in a particular subject and of dull children who do comparatively well. What is the explanation of these variations? The question is partly answered by a consideration of the relationship found between general intelligence and success in the various school subjects.

To supply this part of the answer the intelligence test [1] scores for 100 boys were correlated with their scores in standard scholastic tests. The following observed correlation coefficients were obtained (Table I).

[1] *The Northumberland Test of General Intelligence*, C. Burt (University of London Press).

TABLE I

Correlation Coefficients of School Subjects with General Intelligence for 100 Boys

	General Intelligence *r*.
Arithmetic : Mental	+·68
Mechanical	+·55
Problem	+·82
Reading : Recognition	+·51
Comprehension	+·65
Composition : Quality	+·61
Quantity	+·52
English Exercises	+·52
Spelling	+·53
History	+·58
Geography	+·51
Writing	+·21
Drawing	+·31
Handwork : Imitative	+·23
Creative	+·57

No conclusions are drawn from this table beyond the very obvious inference that other qualities in addition to general intelligence are required for success in school work.

These other qualities vary in importance from subject to subject ; thus in drawing they appear to exert a major influence, while in problem arithmetic they have minor values compared with that of general intelligence. In the main, these additional qualities which contribute towards academic proficiency may be grouped under three headings, namely, specific intellectual factors, opportunity (teaching, home influences, etc.) and emotional influences. Neither their exact nature nor their proportionate values in the different school studies have been determined exactly, but they indicate the need for variety of method and flexibility of treatment in the numerous aspects of school work. The formerly accepted emphasis on the purely intellectual approach is revealed as inadequate, particularly in some of the less formal subjects. These additional elements in school progress also explain the variations that exist in the

standards reached by the same pupil in the different subjects. They reveal the absurdity of expecting a uniform level of attainment for the same pupil in every school occupation.

Take three concrete cases of pupils of *similar mental and chronological ages*: Fred. A., aged $10\frac{8}{12}$, mental age 11·1; Albert C., aged $10\frac{5}{12}$, mental age 11·0; John D., aged $10\frac{2}{12}$, mental age 10·9; they obtained the following age scores on a series of scholastic tests.

	Fred A.	Albert C.	John D.
Arithmetic : Mental . . .	11·1	10·0	10·6
Mechanical . .	11·5	10·0	10·8
Problem . . .	10·8	10·1	10·7
Reading	10·5	12·2	10·6
Composition	10·6	11·4	10·0
Spelling	10·7	12·5	10·4
History	11·0	11·0	10·1
Geography	11·1	11·0	10·1
Writing	10·1	10·7	11·1
Drawing	10·2	10·6	12·0
Handwork	10·0	10·5	12·2

The variations from subject to subject for the same pupil is as much as two-and-a-half mental years. Albert C. obtains only a mental age of 10·0 for arithmetic, but in reading and spelling his results are equivalent to mental ages of 12·2 and 12·5 respectively. Similarly, John D. writes a composition, the value of which is only 10 mental years, but when he engages in drawing, bookbinding or woodwork, he increases his scores by 2·0 and 2·2 mental years respectively. An examination of the results of each boy shows that in some subjects scores fall one mental year below the age for general intelligence, while in others they rise to one-and-a-half mental years above it. In all three cases, years of schooling and general intellectual calibre are comparable, so that as far as one can judge from brief case histories the reasons for these scholastic variations are to be found in emotional traits, influenced by early successes and failures, parental attitudes and home atmosphere. The

details of these and their relation to ability in the numerical, verbal and manual fields we shall not at this juncture consider ; we are concerned with the variations themselves.

The positive divergences from intellectual standards are wholesome and encouraging, but what viewpoint should be taken of the negative ones ? Are they of sufficient importance to warrant special consideration ? This question is a basic one in the entire problem of backwardness, for it involves a clear conception of what constitutes backwardness and of the correct attitude towards its treatment. Some teachers would regard the weaker subjects of the three cases previously cited as demanding immediate attention. There would be a constant drive to improve A.'s writing, drawing, and handwork, additional arithmetic for C. and increased emphasis on D.'s verbal activities. To an extent this is correct, but where the desire for improvement becomes too intense and charged with emotion the procedure does more harm than good. The child begins to consider himself inferior in the particular subject or subjects under surveillance, with the result that his confidence and his pleasure in those fields begins to diminish. This is sometimes the case in a classroom where the bulk of the pupils are slightly above normal intelligence and where the general level of attainment is high.

On the other hand, there are teachers who hold the opposite view : they believe that scholastic deficiencies will right themselves provided the child has continuous schooling and normal health. They subscribe to the doctrine that dull children are frequently slow developers, while backwardness in particular subjects is due mainly to external factors. This optimistic attitude is certainly an effective antidote to those who would force all pupils to a uniform scholastic level, but it also severely penalises some children. It is necessary to recognise that there are cases whose general intellectual equipment is permanently deficient and for whom no school influences or lapse of time will produce normality. These are innately dull pupils, not only of a subnormal intellectual calibre but of an inferior

rate of mental progress, who require a different curriculum with modified teaching methods. In addition there are pupils whose backwardness in one subject is sufficiently pronounced to require specific treatment. If aid is not forthcoming their condition intensifies and not infrequently colours all their school work. Take, for example, children who fail to learn to read adequately in the infant department and who are promoted to the junior school where through force of circumstances their backwardness increases rather than diminishes. Pronounced weakness in reading and spelling means poor written English. Deprived of the means of self-expression that all young children like so much, namely oral and silent reading, they lose confidence in themselves, and complicating emotional barriers are raised towards their school work in general. Unable to read, they are robbed of a source of obtaining knowledge and new ideas. Their arithmetic suffers in consequence. Further work built on insecure foundations tends to confuse rather than clarify, so that at the age of ten or eleven some of these children present typical pictures of general backwardness [1] at times so pronounced that it is difficult on first acquaintance not to suspect dullness.

Foregoing paragraphs have made general reference to two points. The first is that *certain deviations from average scholastic achievement need not be regarded as demanding special consideration, they are natural variations which simply require an attitude of healthy optimism and ordinary classroom assistance.* Of course, some methods help more than others in this direction ; thus class sections, cross classification or subject sets and individual teaching methods contribute towards enabling the teacher to suit material to the pupil and to allow him to progress at his own rate for particular subjects.

The second point indicates that *there are other less common cases where inability to reach a normal standard is sufficiently marked to warrant special remedial measures.*

[1] As my colleague, Dr M. M. Lewis, points out, this subsequent general backwardness may be due partly to the emotional conditions produced by continued failure in reading and spelling, and partly to the factors which themselves caused the verbal disability.

Types of Backward Children

This second group of less common cases whose standards in school work are sufficiently low to require special attention represents the various types of backward pupils. Thus *a backward pupil is one who, compared with other pupils of the same chronological age, shows marked educational deficiency.* This educational impoverishment may characterise only one school subject or it may be shown in all subjects, *i.e.* backwardness may be either *specific* (one or two subjects) or *general* (all or most subjects). The backwardness may be primarily due to *innate causal* conditions or to *acquired or extrinsic* conditions. Briefly, we may classify backward pupils under three headings :

(*a*) The *dull* pupils whose backwardness is due primarily to intellectual deficiency. These children are invariably *generally backward*, that is, they are incapable of making normal progress in most school subjects.

(*b*) The *generally backward* pupils who are *not dull.* These pupils are backward in most subjects, but their backwardness is due not to intellectual weakness but to acquired or extrinsic conditions, such as adverse temperamental attitudes set up towards the teacher, absence from school, frequent change of school, or ineffective teaching methods.

(*c*) The *specifically backward* pupils who are markedly below normal in only one or at most two subjects, *e.g.* backward in arithmetic but up to standard in other subjects, or backward in spelling and reading but making normal progress in other subjects.

It should be realised that these are, to some extent, categories of convenience. Many backward pupils owe their condition to a combination of both innate and acquired causal conditions, and this is true of both generally backward and specifically backward children.

The means by which we can differentiate these three groups of pupils from the general school population and their various characteristics are considered in the following paragraphs. Generally, considerations are supplemented by a detailed analysis of the problems in a particular school.

Differentiation of Backwardness

Teachers are, on the whole, efficient in detecting backward pupils, particularly in their own schools. From estimates of intelligence and class results they can indicate with a passable degree of accuracy those pupils who need special treatment. Their judgments can, however, be improved upon, for often cases are selected which do not require special consideration while others deserving of attention are passed over.

This margin of inaccurate differentiation is, however, greatest from school to school. What is a fair educational level in one school may be poor in another. What constitutes scholastic backwardness in one district may be synonymous with average performance elsewhere. Such variations explain the apparently different attitudes towards backwardness and the varying degrees of efficiency that characterise provisions for backward pupils. For an exact estimate of amount of backwardness in an area and suggestions for proper differential treatment it is imperative that objective standards of measurement should be adopted.

Intelligence Tests and Standardised Scholastic Tests

In kind these objective measures do not differ materially from those used by the teacher, except that they have been carefully constructed and scientifically standardised upon representative samples of pupils. They are methods of measurement which are widely applicable and which provide valid comparisons from child to child and school to school. No claim is made that they attain maximum efficiency;

they have minor deficiencies and, without doubt, are improvable. Their chief merits lie in the fact that they reduce the subjective element in tests ; that they have been systematically compiled ; that instructions for giving them, marking them, and assessing their results have been standardised ; and that, in consequence, their reliability and their comparative values are relatively high.

By using these measures the different types and degrees of backwardness in the school population can be accurately determined and adequately understood. Consider, for example, the fundamental data obtained from testing a junior mixed school in an area of average social grade. In this case the Simplex Junior Intelligence Scale [1] was given to 317 pupils—173 boys and 144 girls. The distribution of chronological ages and intelligence quotients is set out in Tables II and III respectively (p. 58).

Now, on adequate tested samples of the school population it is found that certain ranges of intelligence quotients indicate certain degrees of general intelligence. Pupils who have I.Q.'s above 109 reveal supernormal intellectual powers, while those whose I.Q.'s fall between 85 and 109 are considered as representative of the average or normally intelligent pupil. *Below the I.Q. level of 85 are pupils whose general intellectual capacity appears to be sufficiently inferior to require special consideration.* Within this group are some who can still remain in the ordinary elementary school. Provided methods and materials are suitable they make progress commensurate with their limited intellectual ability.[2] There are others for whom the ordinary school finds it difficult to organise a curriculum ; these pupils appear to profit most from an educational course, with a definite physical,

[1] Compiled by C. A. Richardson, M.A. Published by Harrap & Co. Sleight Non-verbal Tests were used for backward readers and dull pupils, the Simplex Intelligence Scale not being valid for pupils with reading ages below 8·0 years.

[2] For details of the mental characteristics of this group and of the general and specific teaching procedures to be adopted with them, see *The Education of Backward Children*, editor, H. R. Hamley (chaps. iii to vi, Fred. J. Schonell). (Evans Bros. and the Institute of Education, 1936.) "The Education of Backward Children," Board of Education Publication No. 111, His Majesty's Stationery Office.

manual and concrete bi ıs, carried out in a special class or department. The first named are the *dull*, for whom the range of I.Q. is from 70 to 84. The second group, strictly

TABLE II

Distribution of Chronological Ages of all Pupils in a Junior Mixed School

Age.	Number.		
	Boys.	Girls.	Total.
7- 7·11	14	8	22
8- 8·11	35	45	80
9- 9·11	47	33	80
10-10·11	51	37	88
11-11·11	26	21	47
Totals . . .	173	144	317

TABLE III

Distribution of Intelligence Quotients of 317 Pupils in a Junior Mixed School

Chron. Ages.	No. of Cases.	Range of Intelligence Quotients.									
		60-69.	70-79.	80-89.	90-99.	100-109.	110-119.	120-129.	130-139.	140-149.	150-159.
7	22	0	0	0	3	7	6	3	3	0	0
8	80	0	5	9	26	21	13	3	1	1	1
9	80	2	5	10	14	21	18	8	0	1	1
10	88	2	6	9	16	24	15	11	5	0	0
11	47	0	2	4	7	15	9	9	1	0	0
Totals	317	4	18	32	66	88	61	34	10	2	2
Percentages		1·3	5·7	10·1	20·8	27·7	19·2	10·8	3·3	0·6	0·6

speaking those *not educable in the ordinary school*, are designated *the mentally defectives* in the narrower sense of the term, and range in I.Q. from 50 to 69. Naturally, such lines of demarcation are mainly for administrative purposes. We

do not find a strict adherence to them in school life. There are dull pupils in normal classes and mentally defective pupils in classes specially organised for the dull.[1] All of them are backward in a general way, their impoverished educational condition being a direct outcome of their intellectual inferiority.

Examining Table III in the light of this classification in terms of I.Q., we find that 31 (9·8 per cent.) pupils are dull, while 4 (1·3 per cent.) are mentally defective. In all there are 11·1 per cent. of the pupils in the school whose backwardness is due primarily to an innate intellectual weakness. The estimate of the class teachers, prior to the test, was 22 innately dull pupils (including M.D.'s), or 7·6 per cent. of the school. According to intelligence test standards this is an under-estimation of 3·5 per cent.

Although dullness necessarily produces scholastic backwardness, not all backwardness is the outcome of dullness. Here again objective standards of measurement assist in a correct ascertainment of the proportion of backward pupils who are not dull. In practice this aspect of the diagnosis of backwardness presents most difficulties. It is the least understood and the most ineffectively treated, yet it is the keynote to the entire problem of general backwardness. Actual figures assist in clarifying the issue. All pupils in the junior mixed school referred to in a previous paragraph were given, at different times, a number of standardised tests in English (composition and English exercises) and in arithmetic (mechanical and problem). From norms of achievement, achievement ages for English and for arithmetic were calculated; these were compared with the chronological ages of the pupils and the ratio expressed in terms of 100 points thus :

$$\text{English quotient} = \frac{\text{achievement age for English}}{\text{chronological age}} \times 100.$$

[1] For accounts of schemes for the treatment of dull pupils in a school population, see *The Education of Backward Children*, M. E. Hill (Harrap & Co.), and *The Education of Backward Children*, Leicester Education Committee.

The distribution of English quotients and Arithmetic quotients in the school is shown in Table IV.

TABLE IV

Distribution of English and Arithmetic Quotients of 322 Pupils in a Junior Mixed School

Quotients.	50-59.	60-69.	70-79.	80-89.	90-99.	100-109.	110-119.	120-129.	130-139.	140-149.
English										
No. of cases	0	6	12	38	101	78	40	35	12	0
Percentage of cases	0	1·9	3·8	12·0	31·9	24·6	12·6	11·0	3·8	0
Arithmetic										
No. of cases	2	8	16	37	93	65	47	40	6	2
Percentage of cases	0·6	2·5	5·1	11·9	28·3	20·5	14·8	12·6	1·9	0·6

Examination of Table IV shows that, accepting an educational quotient of 85 (*i.e.* subject level approximately 1½ years below chronological age) as the line of demarcation between normal and subnormal efficiency in a subject, there are 25 boys and 16 girls, that is 41 pupils, or 12·9 per cent., backward in English. By the same criterion there are 17 boys and 21 girls, that is 38 pupils, or 12·2 per cent., backward in arithmetic. Of these two groups of pupils, those backward in English and those backward in arithmetic, there are 11·4 per cent. backward in *both* English and arithmetic.[1] Of this group, backward in both subjects, 7·2 per cent. are dull and 4·2 per cent. are of normal or supernormal intelligence.[2] This small group of 4·2 per cent.

[1] For the backward pupils this school had organised a backward class which contained 37 pupils of 8+ to 11 who were making excellent progress with a modified curriculum and individual help.

[2] In Leicester an attempt has been made to solve these two different problems of backwardness, namely suitable teaching for the dull and backward, and appropriate remedial treatment for the backward but not dull. The innately dull pupils, whether dull or mentally defective in the technical sense of the term are placed in special classes, "S. Classes," attached to ordinary

of the pupils have intellectual powers which are superior to their scholastic achievements. Through illness or emotional handicaps they have been prevented from making school progress commensurate with their intellectual ability. They represent cases of improvable scholastic deficiency. Their present scholastic state is characterised by an unrealised margin of intellectual power, a condition to which the term *retardation* seems most applicable.

Retardation is a state of improvable scholastic deficiency and as such may characterise dull, normal or supernormal pupils. Retardation may be of varying degrees ; in the cases just considered, it was extreme enough to be synonymous with general backwardness. An examination of the intelligence quotients of pupils who are below average level in arithmetic and English will reveal cases of a lesser degree of retardation. Their condition is not extreme enough to be called backwardness, but there is a margin of intellectual power which does not appear to have been used in their progress in arithmetic and English. Sometimes this additional mental energy is being held up by emotional factors. Laziness, lack of interest, personal conflicts, lack of co-operation with the teacher, nervous tension, and parental anxiety are some of the forces that prevent a child from realising fully the intellectual ability with which he is endowed. Of course, we should not exclude the possibility that there are cases of children where the margin of intellectual power must remain unused. Like gold that cannot be extracted from refractory ore, some of the intellectual energy of these pupils remains unexpressed through inhibiting emotional forces. Instability, lack of persistence or lack of drive constantly limits the usefulness of their potential power.

Retardation, which may be general or specific, is seen in its most pronounced form in bright children. Consider schools, where modified curricula and adapted teaching methods are employed. The remediably backward children are grouped in an experimental school where they receive more adequate attention to emotional problems (*e.g.* play therapy for younger maladjusted backwards) and more intensive coaching in reading and number. The success of such an experimental school depends upon a staff scientifically trained in diagnostic and remedial teaching and in psychological measures of a therapeutic kind.

the case of John S. (C.A. $10\frac{7}{12}$, M.A. 11), whose personal history showed that until the age of $8\frac{3}{12}$ he had attended a small private school, where careless habits and too early introduction to French interfered materially with his progress in English. In addition to the apathy that John had developed towards his linguistic disability through weak class discipline, his condition was made worse by the intermittent absence from home of his father and the indulgence of his mother. In general knowledge, handwork and drawing, John had attained the level of an eleven-year-old, in arithmetic tests his scores showed mental ages between 9·5 and 10·0, but in reading and spelling his achievements were little better than those of a seven-year-old boy. Subsequent remedial work demonstrated that there was a very considerable margin of unrealised intellectual power with respect to verbal attainments in this case.

It should also be borne in mind that the dull as well as the supernormal may be seriously retarded. Dull children who are not helped with material and methods that they can understand, become worse in their school work than their general intelligence warrants. Sleight [1] has shown that in 653 cases of backward children (72 per cent. of whom were dull), for whom he obtained complete standardised test results in general intelligence, English and arithmetic, approximately 50 per cent. were working up to the level of their intellectual powers, while 16 per cent. were retarded in both English and arithmetic, 17 per cent. were working below standard in arithmetic but not in English, and a similar percentage were retarded in English but not in arithmetic.

Dull children can rarely attain to the scholastic standards of normal children, but they can at least make school progress commensurate with their limited level of general intelligence. From time to time one sees cases of older dull boys and girls who have been allowed to drift. Largely as

[1] G. F. Sleight, "The Diagnosis and Treatment of Dull and Backward Children," 1932. Unpublished Ph.D. thesis in the Library of the University of London.

a result of continued failure in the three R's and of school attitudes towards them, they have accepted the opinion that they are inferior, and so have given up the struggle. This educational capitulation usually takes place between the tenth and eleventh years, when, if nothing is done to give them a fresh start in school, they finally become some of the most pronounced cases of general retardation that school life can show. Between the ages of thirteen and fourteen they exhibit achievements in formal subjects little beyond an eight-year-old level, yet their general intelligence indicates ability almost three mental years in advance of this. The condition of such pupils forms one of the strongest arguments for non-selective central school or senior school organisation. Provided a proper curriculum is formed with a maximum of manual and extra-school activities the senior school and the C and D classes of a non-selective central school can, at 11+, give these pupils a new lease of school life. Their retardation can be remedied and their entire attitude towards school work can be rehabilitated.

So far our discussion of backwardness and retardation has emphasised general aspects of the problem. But in addition to pupils who are below standard in most school studies there are some whose retardation is of a special kind, it characterises sometimes one and occasionally two school subjects. There are intellectual or emotional elements in the pupils' mental processes which have a special retarding influence on a particular subject, but which do not interfere with their general educational progress.

For example, one sometimes finds that the intelligent, highly strung, unstable child may succeed in verbal subjects and may even be outstanding in oral work or certain forms of creative art, but that his arithmetic, particularly mechanical arithmetic, is much below standard. His emotional equipment is such that it interferes with only one type of activity, namely, that involving figures. Or again, we might cite the example of children who do not make the correct left-to-right attack on words ; a few of them start at the right and work backwards, while others commence in

the middle and work either to right or to left in perceiving words. These pupils, if not detected and helped by specific measures, become cases of backwardness in reading and spelling. Here we might note that although initially the intellectual deficiency does not influence their general educational progress, neglect of it may hamper school work in general.

In many cases these special handicaps are sufficiently pronounced to cause backwardness of two or more mental years, a deficiency which prevents the pupil from adequately participating in work done by his usual class in the particular subject or subjects. To these children who require special consideration in a single subject, or in two or three associated subjects, such as reading and spelling, or reading, spelling and written composition, the term *specific backwardness* is given.

Of all pupils who exhibit subnormality whether intellectual or emotional, within the school or without the school, the specifically backward appear to receive the least effective attention. The intellectually subnormal has been provided for in schools for the mentally deficient, and in special classes for the dull and backward. Some of the emotionally subnormal are being helped towards normality by healthier teaching methods, by clinics and by the School Medical Service. The supernormal pupils, too, after being selected by the application of carefully compiled examinations and intelligence tests, have been given the opportunity of advanced tuition at secondary schools and selective central schools.

The organisation of appropriate treatment for dealing with special abilities has lagged behind the advance in theoretical knowledge. It is true that Vocational Guidance Bureaux and even some types of schools have commenced to assist individuals conspicuously talented in particular subjects. But, on the other hand, very little has been accomplished for the intelligent scholar who exhibits marked retardation of a specific kind.

The deficiency is often too lightly regarded, yet its effect

upon the child's educational and emotional development, and even upon his entire life, is extremely important. There are not a few cases where general backwardness and delinquency have directly resulted from continued neglect of a specialised defect.

Not always is specific backwardness curable ; we should distinguish between remediable and irremediable forms of special scholastic disability. Like the innately dull, who will always be generally backward owing to an inborn intellectual deficiency of a general kind, there appear to be some cases of specific backwardness, happily few in number and many less than is popularly supposed, whose mental equipment is characterised by some special deficiency which will always cause some special scholastic weakness.

Summary

To summarise, then, the pertinent facts concerning school backwardness, we note that in the first place the degree of correlation between general intelligence and success in a school subject varies considerably with the subject. General intellectual ability is only one factor contributing towards normal achievement in the different school studies. Opportunity, practice, mental maturity and emotional attitudes must all be considered. It is these contributory factors that produce, in every child's school work, variations in the level of attainment from subject to subject. These are natural variations which should be viewed in a natural way. If they become marked and demand special consideration, other than that given under normal classroom conditions, they constitute retardation or backwardness. The various forms of deficiency in school may be tabulated as follows :—

A. *Dullness* or intellectual deficiency which is almost invariably accompanied by general backwardness.

B. *Backwardness* or scholastic deficiency which may be *general* and characterise all school work, or *specific*

and characterise one or two of those subjects only. Both general and specific backwardness may be *remediable* or *irremediable*.

C. *Retardation* or a condition of unrealised intellectual ability which characterises bright, normal and dull pupils alike. Retardation may be sufficiently pronounced to be synonymous with general backwardness.

Retardation may be regarded as an assessment from an individual standpoint of educational level in relation to intellectual capacity. Backwardness may be regarded as an assessment from a group standpoint of educational level in relation to chronological age capacity. Both retardation and backwardness demand individual and, at times, specially organised methods of treatment.[1]

[1] The Education Act 1944 now brings the whole problem of the ascertainment and treatment of subnormal, backward and maladjusted children more closely within the administrative machinery of the Local Education Authorities. The Act makes it obligatory for Local Education Authorities to make adequate provision for all groups of handicapped pupils needing special educational treatment (see circular 53, Ministry of Education, *Handicapped Pupils and Medical Services Regulations*, 1945, H.M.S.O.). The term handicapped pupils, which includes the dull and backward and mentally defective, now termed "educationally subnormal children," also relates to children with speech defects and maladjusted pupils, defined in the regulations, as those who "show evidence of emotional instability or psychological disturbance and require special educational treatment in order to effect their personal, social or educational readjustment."

Certification of mentally defective children has been abolished. The compulsory age of attendance for all handicapped children needing education in special schools is now 5 to 16. Official guidance has been given regarding the ascertainment of educationally subnormal children (circular 146, Ministry of Education) and their special educational treatment.

CHAPTER IV

SELECTION OF CASES OF SPECIFIC BACKWARDNESS

THE previous chapter contained a consideration of backwardness, its nature and types. Succeeding chapters are devoted to the results of an investigation into one type of backwardness, namely, *specific backwardness* in reading, spelling, oral and written composition. An initial step in the research was the selection of cases. To obtain a comprehensive estimate of the distribution of specific backwardness amongst elementary schools, it was deemed advisable to include schools representing various types of organisation and varying points on the social scale. It was also thought that this representative sampling of schools would aid in determining the influence of certain mental and environmental factors on different forms of specific backwardness.

Such questions as the following present themselves. How far does backwardness in reading affect ability in composition? Is there less specific spelling disability in girls' departments than in similar boys' departments? To what extent does the cultural level of the home influence specific backwardness in reading?

The first classification of schools in which cases were to be studied was made on the basis of social conditions. A threefold categorical distinction of poor, medium and good was adopted. The actual selection of a school was determined principally by the residential status of the neighbourhood [1] (type of street near by, kind of house, number of people per room, rental, general prosperity), the economic position of the parents (vocation, wages), the

[1] For pertinent material of a general kind relating to this point, see *New Survey of London Life and Labour* (P. S. King and Son), also *Survey of Merseyside*, vol. i, chaps. 5, 6, 7 (University Press of Liverpool).

home conditions of the children (general opportunities, restrictions of home environment, and out-of-school interests) and an interesting factor, supplementary to the main issue, the number of secondary school scholarships and central school entrances gained by the school in the past five years. In the assessment of these factors, teachers and welfare workers gave assistance. Valuable information was obtained by questioning all children in sample schools of good, medium and poor grade. The children's replies were checked by the headmaster and class teachers who materially assisted with information gleaned from parental interviews and Care Committee meetings. Table V reveals the magnitude of variation of certain vital factors in the three grades of schools.

TABLE V

Social Conditions of Sample Schools used in the Investigation

No.		Good School.	Medium School.	Poor School.
A.	Vocational Status [1]—		Percentages	
	1. Highest Professional—Administrative	...	...	...
	2. Lower Professional and Technical .	1·5	...	...
	3. Clerical and Highly Skilled . .	33·0	10·0	1·0
	4. Skilled and Minor Commercial .	47·1	41·3	4·6
	5. Semi-skilled and Poorer Commercial	12·4	34·7	18·0
	6. Unskilled and Coarse Manual Labour	5·0	12·0	28·2
	7. Casual Labour	1·0	2·0	42·9
	8. No work for many years (Inability or Disinclination)	...	...	5·3
			'Averages	
B.	No. of persons to each room . . .	1·9	2·5	3·8
C.	No. of children in family	3·5	4·4	6·1
D.	No. of Junior County Scholarships .	6·2	1·6	...
E.	No. of Selective Central School Entrances	12·0	8·8	0·4

From the poorest school, close to one of the criminal quarters of London, to the best grade of school in a good residential area, there were far greater differences than those apparent in a table of percentages. In most cases the

[1] For a wider consideration of the various vocational groups, see *A Study in Vocational Guidance*, Industrial Fatigue Research Board Report, No. 33, 1926, p. 16.

cultural standards, the home conditions, the general intelligence of the parents and the means of intellectual stimulus from household material differed decidedly in the homes of pupils from the poorer schools and those from more fortunately placed schools. In not a few cases it was interesting to note how the different environments produced, in children of similar intelligence quotients, quite marked variations in the nature of and the attitude to their specific backwardness. One was constantly forced to notice that, with pupils in poor schools, backwardness in school work, whether general or specific, was to a large extent a social problem connected with such factors as physical defects, repeated absence, and insufficient nourishing food and sleep. The social conditions produced in certain cases physical handicaps which in turn caused emotional and intellectual deficiencies.

In specific, as well as general backwardness, the home standards were of paramount importance. Their exact influence on verbal disabilities is discussed in detail later ; it is sufficient to note at this stage that it is necessary to select cases of backwardness from schools of varying social grades if we are to obtain comprehensive information on scholastic disabilities.

The actual number of pupils in the three grades of schools from whom the cases of specific backwardness were drawn is shown below.

TABLE VI

Numbers of School Population from which cases of Backwardness were drawn

	Good.	Medium.	Poor.	Totals.
Boys	2616	2916	2312	7844
Girls	2349	2887	2435	7671
Totals . . .	4965	5803	4747	15515

It will be noticed that there are approximately equal numbers of scholars in the " good " and the " poor " schools,

and a slight excess of those drawn from neighbourhoods of "medium" social standing. The two sexes are practically evenly distributed in the three grades of schools.

The investigation related to all the cases of specific backwardness in reading, spelling and composition in a school population of 15,515 children.

The range in type of school (juniors and seniors, boys and girls) gave an adequate age range of cases and provided a basis for information on continuity of methods, teaching attitudes, intellectual calibre of pupils and variety of internal organisation.

Detailed diagnostic studies were not undertaken with every specifically backward pupil in these schools, but problems concerning the type of backwardness were investigated by a valid testing technique, while questions of distribution and the influence of certain social and educational factors of a more general nature were reliably considered.

The investigation was explained to head teachers,[1] who were invited to co-operate by forwarding the names of all specifically backward pupils. These were defined as,

> "children whose ability in a subject (or two allied subjects) was at least 1½ years below their other educational attainments and general intellectual level."

Examples of cases of specific backwardness in terms of chronological ages and standards were given for guidance.

A reply was followed by a personal visit of the investigator.

The question next arose as to how one was to determine accurately whether the cases offered conformed to the essential criteria laid down. An answer to this involved three distinct steps: firstly, an accurate assessment of the

[1] In later stages of the investigation which has been carried out over seven years, head teachers were good enough to allow me to make my own initial enquiries throughout the schools. From other schools one or two outstanding cases of specific backwardness would be referred to me for help, a procedure that was usually followed by a survey of the school's backward children to enable me to include the school in my records.

degree of disability in the subject or subjects in which the pupil was regarded as backward; secondly, a reliable estimate of his general intelligence; and thirdly, a measurement of his achievements in other school subjects.

The order of dealing with and the results from these three assessments had an important bearing on the development of the investigation. It was necessary to formulate in the early stages an efficient technique entailing a minimum of labour in the selection of cases. Considerable time could otherwise be spent on pupils who were not specifically retarded but who were either working up to their mental level or were generally backward.

An estimate of general intelligence was first obtained from class teachers. This was given in terms of five degrees denoted by the letters A, B, C, D, E, signifying "well above average," "above average," "average," "below average," and "well below average." Standardised attainment tests in subjects in which the pupils were backward were then given. For this the procedure varied; sometimes the selection and diagnosis of cases in a single subject, for example spelling, would be carried through; at other times the children would be formed into groups, and while some were engaged on a test demanding oral instructions and supervision, others would be occupied with a written test having written instructions. Results of the test, calculated in subject ages, enabled comparisons to be made with chronological age and approximate assessment of general intelligence. This pointed to the immediate elimination of some children. For example, a pupil aged $10\frac{8}{12}$ years with a subject age for spelling of 10 years and marked C in general intelligence could safely be omitted; he would only have warranted further enquiry if his mental age for general intelligence were $12\frac{1}{2}$ or 13 years. Experience showed that it was improbable that teachers' estimates should be incorrect to that extent; in most cases they tended to over-estimate rather than under-estimate. Even slight degrees of supernormality were nearly always detected. In all cases similar to the above an intelligence test was

given if the teacher indicated "above average" general intelligence. In some instances teachers were surprised to find that pupils put forward by them were not regarded as sufficiently backward to claim special psychological examination. Of these cases there were not a few. They were children who were working slightly below mental level in a particular subject, but whose backwardness could not by any means be regarded as specific. The teacher's standard was sometimes too high. He did not make allowances for the natural variations that occur from subject to subject with all pupils. Sometimes the pupil was bright and his comparatively poor spelling stood out conspicuously from his excellent attainments in other directions. Sometimes the scholar's English showed weakness compared with his ability in arithmetic, his memory in oral lessons, or his skill in handwork. Such cases often revealed, firstly, the need for a clearer conception of normal standards in the various school subjects at different mental age levels, and secondly, the need for knowledge of individual differences—that many children have a personal tempo for particular tasks conditioned by inherited characteristics or past experiences, and that it is unwise to force them along at an unnatural pace. Throughout the investigation there was ample evidence to show that much of the so-called backwardness in scholars would not arise were it more clearly realised that children mature at different rates in different mental processes, and that some school subjects are characterised by longer and more numerous consolidatory periods, as a result of which confusion and backwardness are produced if we present certain material too early or require speed work too soon. This aspect of the investigation revealed also the value of standardised attainment tests used for an occasional class survey.

The next step in the selection of cases was to give an intelligence test to all children whose mental age for a subject was distinctly lower than their chronological age. The only exceptions here were those cases whose general intelligence had been assessed by teachers as "well below

average." The London Revision (and later the Terman Revision) of the Binet-Simon Scale was used, supplemented in most instances by a non-verbal test, namely, Sleight Non-Verbal Test of Intelligence.

Cases whose age for a subject or for two allied subjects was less than 85 per cent. of their mental age for general intelligence were provisionally deemed to fall within the purview of the investigation. This selection rested on the assumption that, except in the case of backward readers, most of their other educational achievements were approximately level with their mental ability, a point which had to be verified by the application of standardised tests in other school subjects. Before referring to results from this final step in the selection of retarded or specifically backward pupils, it is necessary to amplify somewhat the opening sentence of the paragraph, that if subject age was less than 85 per cent. of mental age for general intelligence, then the case was included for further investigation. It is apparent that in this, chronological age should also be considered, otherwise we set a much higher standard for brighter than for duller children. Reference to the test results from cases set out below illustrate the point.

Rene C.		*Albert F.*	
Chronological age	$8\frac{8}{12}$	Chronological age	$11\frac{6}{12}$
Mental age	10·2	Mental age	10·1
Reading age	7·6	Reading age	7·7

Here are two scholars whose mental ages for general intelligence and for reading are similar, but whose chronological ages differ by almost three years. Obviously the boy is a much more pronounced case of educational deficiency than the girl. He has had the advantage of nearly three years more experience with reading techniques and material but has only managed to reach the same level. In the girl's case *retardation was more relative than real*; further experience with printed material, particularly extra-class reading of simple books, later produced rapid improvement.

With some of these brighter children, examination

showed that lack of interest and lack of opportunity, due to a combination of home and school conditions, not infrequently kept them back in a certain subject. Rene C. was, in arithmetic, almost two mental years ahead of her achievements in reading and spelling. She was intensely interested in numbers and was spurred on by the success she obtained. She spent some of her time at home doing sums but rarely bothered about verbal activities, a not unnatural attitude, for we all tend to do the things we like and succeed in, and to avoid those occupations we dislike or fail in. Yet occasionally we think that children should have developed the opposite attitude and should set about with zest those subjects in which they are backward.

In the case of the boy mentioned above, level of general intelligence was certainly somewhat lower, but considerable additional practice had failed to produce progress at all commensurate with mental powers. Doubtless there were emotional and environmental factors contributing to his reading retardation, but the major factor in his disability was a pronounced weakness in visual discrimination of word patterns. The foregoing discussion emphasises the need for making allowance for chronological age [1] in conjunction with mental age when considering backward children.

Passing reference has already been made to the final step in the selection of cases, namely, the application of tests in subjects other than those in which the pupil was backward. This was essentially to determine how many of the cases still left were specifically and not generally backward. The complete battery of tests [2] used included measures in arithmetic (mechanical, mental and problem), reading

[1] The same applies in calculation of achievement quotients. Wilson, amongst other American investigators, has noted the unsatisfactory results from making general ability the sole determinant of school attainment, that there is frequently a negative correlation between A.Q. and I.Q. due mainly to the practice factor dependent on experience. See F. J. Wilson, "Some Achievements of Pupils of the Same Mental Age but Different Intelligence Quotients," *Journal of Educational Research* (1926), vol. 14, No. 1; W. R. Wilson, "The Misleading Accomplishment Quotient," *ibid.* (1928), vol. 17, No. 1.

[2] Some of these were compiled by the investigator while others were selected from existing standardisations. They are discussed fully in chapters dealing with the various subjects.

(comprehension, word recognition and speed), spelling (words and prose), composition, general knowledge, handwork and drawing or painting. This further educational testing considerably reduced the already shortened list of cases put forward by the teachers.

It is interesting to note at this point that in a number of cases the criterion of approximate level of mental age attainment in all subjects other than the one in which the pupil was deemed to be specifically backward could not be maintained. Early in the research there was evidence of a persistent co-existent disability in written verbal subjects. The pupil who was backward in reading was nearly always backward in spelling and frequently below level in written composition. The reading-spelling disability was characteristic of nearly all children who experienced difficulty in recognising and recalling word forms, but it was with older pupils that the further handicap in written composition was most pronounced, particularly when the topics demanded general reading knowledge. Occasionally, too, when arithmetic exercises required a well-developed power of silent reading, these pupils experienced a further handicap.

It must not be supposed from these statements that there were no pure cases of disability in reading, in spelling and in written composition. In all three subjects the research revealed instances of a specific disability in only one subject, but it was the exception rather than the rule and often had its basis in emotional or environmental factors of a particular kind. In general, the pupil labouring under disability in reading also exhibited backwardness in spelling and in written composition ; the extent of this correlative backwardness in a selected group of cases is tabulated in Chapter IX.

Hence for all cases of reading backwardness, the main criterion was the mental age, while at the same time the pupil had to show by his attainments in arithmetic, in oral subjects and in handwork that he was not a case of marked general backwardness. Correlative backwardness in spelling and composition to a lesser degree was accepted, but

marked discrepancy in all other subjects caused him to be excluded from the research.

Occasionally one found cases of an opposite kind to those just considered where excellent teaching, an industrious attitude on the part of the child, or home assistance, had forced educational achievement slightly above mental age, in all subjects except the one under consideration. Such conditions tended to exaggerate differences originally set

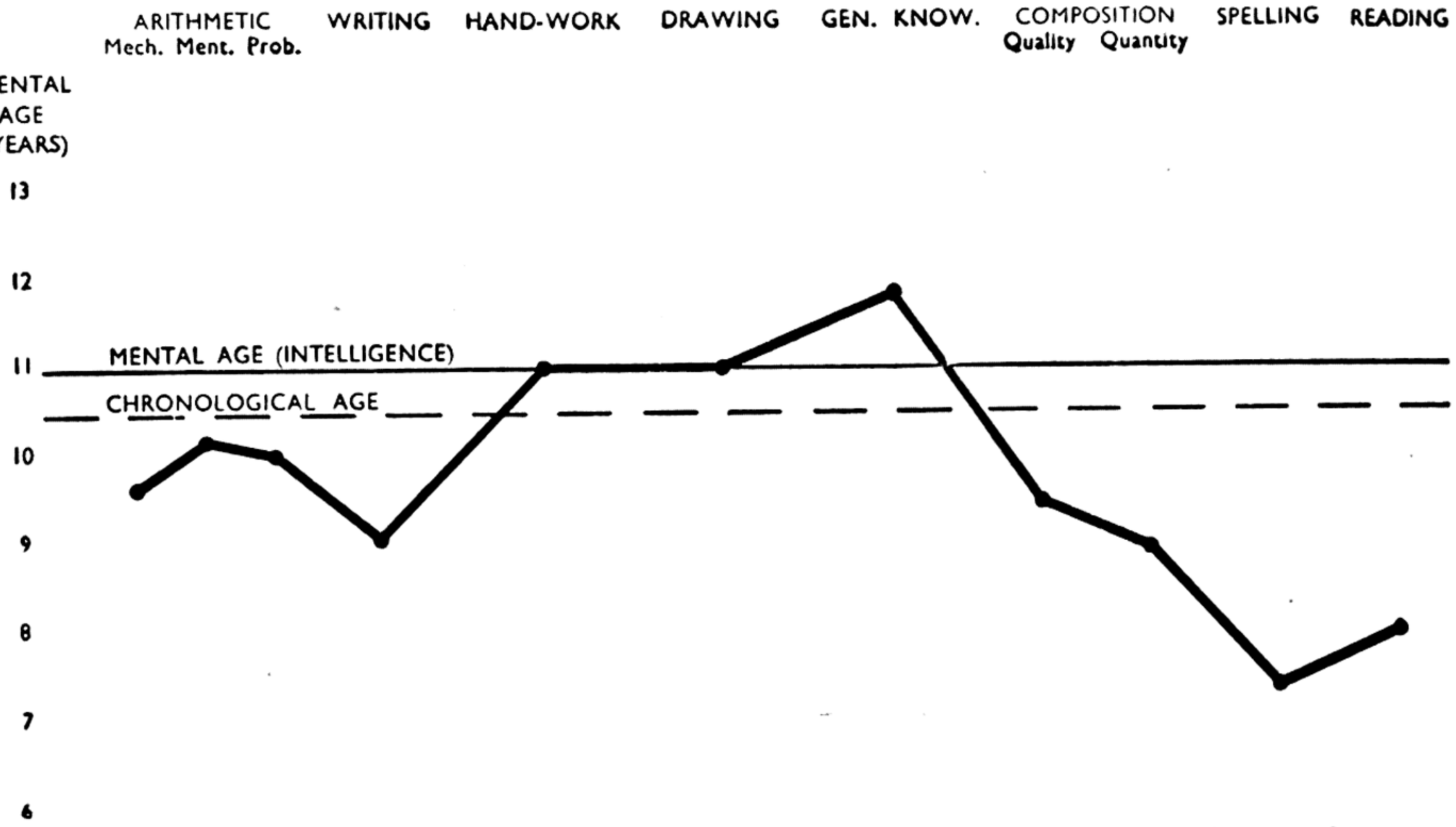


FIG. 1.—Psychograph showing Specific Backwardness in Reading and Spelling. (Case John S.)

down in terms of mental age and subject age and to intensify the need for detailed individual study.

The types of cases finally selected from those put forward are illustrated by the psychograph set out above.

Time was lost in giving Terman tests to prospective cases who proved to be innately dull. Certainly they had one very weak subject, but intelligence test results showed that little more could be expected of them in other school work. Thus one would loiter over cases such as this :

Boy (*a*) Chronological age $11\frac{5}{12}$.
(*b*) Mental age 9·0.
(*c*) Reading age 8·3.

There is a discrepancy between (*b*) and (*c*) of three-quarters of a mental year, but in the circumstances this is hardly sufficient to justify a thorough psychological analysis in search of specific factors in reading disability. In all probability the retardation is due to general intellectual inferiority and the associated emotional handicaps. Teachers were not infrequently led astray in such instances through comparing reading age with chronological age and

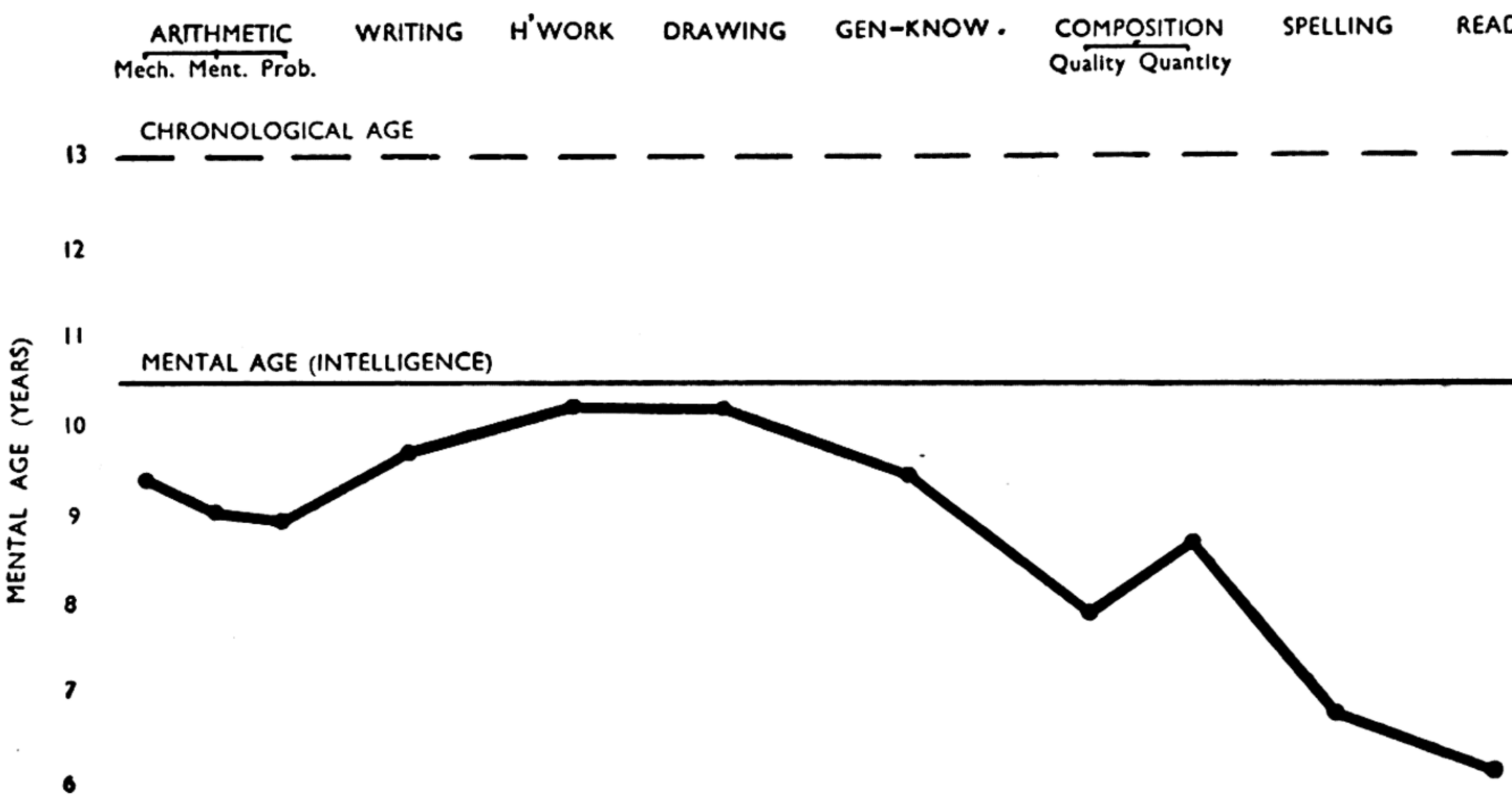


FIG. 2.—Psychograph showing General Backwardness accompanied by Specific Backwardness in Reading and Spelling. (Case Charles A.)

by attaching undue importance to achievements in mechanical arithmetic (involving repeated processes) and in handwork (displayed only in imitative exercises). Ability in composition and in problem arithmetic, and originality of construction in manual subjects, accomplishments more pertinent to the point, were not used as dominant determining factors.

It must not be inferred from foregoing statements that innately dull children were excluded from the investigation. On the contrary, some of the most interesting and instructive cases were those in whom a double strata of backwardness existed—the first, one of general retardation; the second, a more pronounced one of specific defect. These

characteristics of a specimen case are exemplified in the figure on page 77.

In the main, however, children with an intelligence quotient below 85 did not take part in the investigation; they cannot be expected to proceed with an ordinary elementary school programme, and, although marked variations in school subjects exist even at these lower levels of intelligence, the task of discovering the causal factors in their specific disabilities would have been doubly difficult in the face of such pronounced deficiency in general intellectual powers.

A final observation regarding selection of cases might be noted, namely, that relating to the detection of retardation (*i.e.* unrealised intellectual power). Unless these cases were marked, teachers tended to be unaware that such pupils were working below general intellectual level. More attention was paid to the duller child who showed some slight degree of retardation than to bright children who exhibited a much more pronounced degree of retardation.

CHAPTER V

DISTRIBUTION OF CASES AND GENERAL CHARACTERISTICS

BEFORE examining in detail the nature of specific disabilities in the various subjects and particulars of cases selected by the technique set out in the last chapter, it is instructive to consider specifically backward pupils as a group.

The material of the present chapter deals with the prevalence of specific backwardness and its relation to general intelligence, sex, social conditions and educational attainments. In some instances the mental or environmental trait is considered in relation to all the retarded pupils taken as a single group irrespective of subject backwardness; in other cases the characteristic is considered in relation to the pupils taken in groups according to the subject or subjects in which they are backward.

Frequency of Specific Backwardness

It has been stated by some investigators that specific backwardness is almost as common as general backwardness, while others consider that not more than 1 per cent. of the school population can be cast into that category. These estimates differ most markedly; they range from only one pupil in a hundred to as many as ten or even fifteen intelligent pupils in a hundred being backward in one or two subjects. Obviously the disparity arises from different bases of calculation. Occasionally the wide range in figures is due to differences in the line of demarcation between those pupils who are specifically backward and those who can be regarded as normal in school achievements. Results show that the correct line of demarcation is that point at which the frequency curves of a normal population and of a specifically backward population intersect. This is at a

point 1·6 standard deviations from the mean of the normal population group. It is the point which indicates the degree of deficiency that necessitates some special attention for the pupils concerned. This basis of demarcation provides the definition that *a pupil is specifically backward and needs special help when his ability in a subject or allied subjects is at least one-and-a-half years below his other educational attainments, and at the same time below his level of general intelligence.*

More frequently, incorrect estimates of the frequency of specific backwardness in our school population is due to the limited field in which estimates have been made—only particular schools of a particular social grade have been included, or the figures are applicable only to a few age groups or to a single sex. Valid estimates of the distribution of specific backwardness should take into consideration the social conditions of the pupils, different subjects, sex, age and general intelligence.

The distribution of specific backwardness in the three basic subjects of reading, spelling and written composition, as found in the present investigation, is set out below in Tables VII, VIII and IX. The figures are based in each case on a school population of approximately 15,000 children. A differentiation is made between schools of good, average and poor social status, and the different amounts of backwardness that characterise boys and girls in the various subjects are also indicated. It cannot be too strongly emphasised that all the percentages given below refer in the main[1] to intelligent pupils whose achievements in other subjects are almost normal. If the figures were to include all dull pupils backward in reading, spelling, or English, they would be much greater.

Reading

In reading, accuracy of word recognition, speed and comprehension were tested. The tests used are discussed

[1] It will be recalled (Chapter IV) that approximately 15 per cent. of pupils with I.Q.'s below 85, showing specific backwardness, were included in the study.

in the chapter on the diagnosis of disability in reading, and are set out in the Appendices. Pupils who were only backward in comprehension of what they read are considered separately in a chapter on ability and disability in silent reading.

TABLE VII

Frequency of Cases of Specific Backwardness in Reading

Social Grades of Schools.	Percentage of Cases of Disability.		
	Boys.	Girls.	Total.
Good . . .	4.0	2.4	3.2
Average . .	5.7	2.5	4.1
Poor . . .	6.2	3.1	4.6

These figures seem low, but they refer mainly to intelligent children whose work in other subjects is normal, or almost so. If one added to these *all those pupils who were generally backward the percentage of backward readers would rise to an average of* 15.2 *per cent.*

Hume,[1] working with London children mainly of the specifically backward kind, found that there was 2.5 per cent. of reading disability amongst pupils in a school population of 10,000. Miss Hume's percentage was derived from the teachers' returns of backward readers, and the somewhat higher figures in Table VII are probably due to the more widespread use of standardised tests for the selection of cases.

Monroe,[2] whose data refers to 370 backward readers of all kinds, intelligent and dull, finds that almost 12 per cent. of the school population have reading defects (that is, disability sufficiently intense to require special help).

[1] Gertrude Hume, "An Investigation into Disability in Reading amongst London Elementary School Children" (University of London unpublished thesis).

[2] Marion Monroe, *Children Who Cannot Read*, p. 17 (University of Chicago, 1932).

Recently 2899 children in the Borough of Southend[1] were given Burt's Graded Reading Test and the figures recorded were :

1083 children of 7+ years (Infant School)	15	per cent. backward in reading
1456 children of 11+ years (Junior School)	13	,, ,, ,, ,,
360 children of 14+ years (Senior School)	13	,, ,, ,, ,,

Spelling

Accuracy of spelling in word tests and in graded selections of prose, *i.e.* dictation, was measured. The material for the tests is to be found in *Mental and Scholastic Tests* (C. Burt) and *Essentials in Teaching and Testing Spelling* (F. J. Schonell).

TABLE VIII

Frequency of Cases of Specific Disability in Spelling

Social Grade of Schools.	Percentages of Cases of Disability.		
	Boys.	Girls.	Total.
Good . . .	4·1	2·0	3·0
Average . .	5·9	2·1	4·0
Poor . . .	6·3	3·6	5·0

It will be noted that the figures for specific backwardness in spelling, as with reading, show more disability amongst boys than girls. Most backwardness is found amongst boys in schools of poor social grade.

Written English

In written English the essential measure by which backwardness was gauged was the compound result from four different compositions—reproductive, narrative, imaginative and explanatory. The distribution of specific backwardness in written English is given in Table IX.

[1] M. E. Hill, *The Education of Backward Children*, p. 11 (Harrap & Co., 1939).

Table IX

Frequency of Cases of Specific Disability in Written English

Social Grade of Schools.	Percentages of Cases of Disability.		
	Boys.	Girls.	Total.
Good . . .	4·1	3·1	3·6
Average . .	5·5	4·2	4·9
Poor . . .	7·3	4·8	6·1

These somewhat higher figures for specific backwardness in written English are due in the main, I believe, to the increased dependence of English on the environmental factors of home, parents and companions, rather than on the direct scholastic factor of teaching. As the adverse nature of the environmental factor increases, so the percentage of normally intelligent pupils specifically backward in English increases. There is an increase of 3·2 per cent. in boys and 1·7 per cent. in girls from schools of good to poor social grade. This is a greater increase than is found in the case of either reading or spelling.

An examination of all three tables shows that the amount of specific backwardness in the fundamental subjects varies from 2 to 7·3 per cent. There is least specific backwardness in spelling amongst girls in schools of good social grade—only two in every hundred pupils—and most in written composition amongst boys in schools of poor social grade—over seven in every hundred pupils. Most of these estimates are, in general, lower than those popularly given, and the results suggest that, not infrequently, what parents and teachers consider is marked disparity in intelligent pupils between scholastic achievement in particular subjects and intellectual capacity, is not really so pronounced when judged by consistent objective standards. The figures indicate the need in certain cases, particularly amongst brighter pupils, for less anxiety and tension, from both

teachers and parents, if children happen to be a little below normal in one or two subjects. Such deficiencies are often natural variations compensated for in many instances by achievements slightly above normal in other subjects, particularly arithmetic, art or handwork.

The distributions also reveal that specific backwardness in the basic subjects is not so widespread as to make effective remedial treatment an expensive item. Intelligent pupils whose school work shows special backwardness in one or at most two subjects could be catered for without extensive reorganisation or excessive expenditure. Diagnosis could be undertaken by a teacher specially skilled in diagnostic testing, while remedial teaching could be conducted with small groups of pupils graded according to the level of their disability.

It is unlikely that any one school would have more than 9 per cent. of specifically backward pupils—my records show that the maximum amount from a single school was 8·6 per cent. What is most important is that diagnosis and treatment should be undertaken early and that it should be systematic and scientific. Suggestions for organisation of diagnostic and remedial work in an area are discussed in detail in the final chapter.

It will be noted from Tables VII, VIII and IX that there is slightly less disability in reading, spelling, and written English amongst girls than amongst boys—supplementary evidence, in this case from the field of disabilities, of the somewhat fuller realisation of intellectual powers in verbal subjects amongst girls than amongst boys. The results are indicative, too, of the truth of Burt's contention that there exists a verbal factor in school attainments.[1]

With regard to the influence of social conditions upon specific backwardness, results suggest that, generally and

[1] First advocated in Burt's publication, *The Distribution and Nature of Educational Abilities* (P. S. King & Son, 1916). On pp. 52-62, Burt shows, by what can really be considered as the first attempts at factor analysis of measures, that in school work there are verbal, arithmetical, mechanical, artistic and linguistic factors. This early finding has been later ratified by treatment along fuller statistical lines.

particularly, there is an increase in the number of adverse environmental and emotional elements as the standard of social conditions decreases. In every case there is more specific backwardness amongst pupils in schools of poor social grade than amongst those from schools of average or good social level. This means in reality that there is an increase in factors disturbing to school progress in poorer homes irrespective of any decrease in intellectual power. The information indicates the importance of home conditions for normal school work irrespective of intellectual considerations. The necessity of an efficient School Medical Service, of adequate social services, and of healthy parent-teacher contacts, are a few of the inferences which arise from a consideration of these figures.

Relationship between Disability in Reading and Disability in Spelling

An important point, which early manifested itself during the use of tests with backward readers and backward spellers, was the persistent correlative disability that existed in the two subjects of reading and spelling. Out of 285 cases selected for either disability in reading or in spelling and tested in general intelligence and in academic attainments, no less than 96·4 per cent. of the boys and 89·1 per cent. of the girls showed some degree of retardation in both subjects, while in 72·8 per cent. of the boys' cases and 63 per cent. of the girls' cases the disability was sufficiently serious to be listed as specific backwardness. This correspondence between disability in the two subjects is illuminating, but not inexplicable. To some extent we should expect progress in reading and spelling to proceed on parallel, if different, levels—we know, for instance, that the young child's reading is usually superior to his spelling, for not infrequently he can read a word twelve or eighteen months before he can spell it correctly. The two processes of reading and spelling are each concerned with analysis and synthesis of word forms. Correct auditory and visual perception is the characteristic

of the good reader and the good speller, but whereas reading is ultimately the recognition of patterns or forms, spelling is the recall of these forms with their components, the letters, in correct relative positions. Spelling is thus the more difficult process, a fact that is borne out by the different proportions of pupils who are normal in reading but backward in spelling, and those who are backward in reading but normal in spelling. The former are not uncommon, 3·6 per cent. of backward spellers being normal readers amongst boys and 10·9 per cent. amongst girls. These appear to belong to a small group of intelligent pupils whose retardation in spelling is almost exclusively due to certain temperamental factors. Their weak spelling is largely due to inaccuracy not ignorance, to lack of correct attitude not lack of requisite ability. The latter group, *where reading is backward but spelling up to average level, are extremely rare.* The few isolated cases discovered during the investigation were the products of slavish drills on words and word families, bereft of contextual values.

TABLE X

Comparison of Reading Ratios and Spelling Ratios of 215 Specifically Backward Pupils in Schools of Three Social Grades. (In percentages)

	Poor Schools.		Average Schools.		Good Schools.		Totals.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
R. Ratio *above* S. Ratio	38	50	62	66	66	69	58·3	61·4
R. Ratio *equal to* S. Ratio	8	5	20	—0	—0	8	9·3	4·5
R. Ratio *below* S. Ratio	54	45	18	34	34	23	32·3	34·1

Naturally, there were minor variations between the reading abilities and the spelling abilities of all the backward pupils, variations which in this instance seemed to be influenced by definite environmental factors. Only in

the percentage of cases cited above were the variations sufficiently marked to be regarded as normality in one subject and specific backwardness in the other. The special nature of the variations between spelling ability and reading ability of the backward pupils is shown in Table X in relation to the social conditions from which the cases were drawn.

Two interesting features of the above table warrant consideration. In the first place, there is a noticeable increase with improved social conditions in the number of cases where reading ratio is above spelling ratio. This can probably be explained by the fact that in spelling, few children receive specific instruction in out-of-school hours, but that in incidental reading children from good homes get more practice than those from less fortunate surroundings. The standard of speech and vocabulary, and in addition the amount of suitable printed material, is greater in homes of better social standing. These different literary influences within the home produce a tendency for reading and spelling ratios [1] to remain on similar levels for pupils from "poor" homes, but for reading ratios to be superior to spelling ratios for pupils from good homes. A suggestive fact is that the proportion of pupils whose reading ratio is above their spelling ratio to those for whom it is below is lowest amongst specifically backward boys in "poor" schools, namely, 38 : 54, and highest amongst specifically backward girls in "good" schools, namely, 69 : 23.

The figures also show that reading attainments improve more than spelling attainments under conditions of incidental experience with printed material. The child's recognition of words is increased if he is allowed to read books at home, for he is receiving practice in recognising word forms in different contextual settings, but his ability to

[1] Spelling ratio and reading ratio do not simply mean attainment in spelling and reading, but attainment in relation to mental age. There is still a relative difference between spelling attainment and reading attainment—judged by the same group of words the latter is always better with all children—but provision has been made for this in the tests for determining spelling age and reading age.

recall the spelling of words does not improve proportionately. It is additional evidence that spelling—the analysis and consideration of word forms—should be a subject for instruction in the junior school.

Intelligence of Specifically Backward Pupils

The next point of general interest is the intelligence of pupils showing specific backwardness. Are some bright children specifically backward, or is this form of scholastic

TABLE XI

Distribution of Intelligence Quotients of Specifically Backward Pupils
(In percentages.)

Range of I.Q.'s.	Backward in Reading. No. of cases, 155.			Backward in Spelling. No. of cases, 135.			Backward in Written English. No. of cases, 136.			Control Group. No. of cases, 305.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Total.
140-149	...	...	...	...	...	...	...	...	...	0·8
130-139	1·0	1·0	1·0	...	...	1·4	1·7	1·6	...	4·1
120-129	2·3	2·2	2·2	1·0	1·0	1·0	2·3	2·1	2·2	10·6
110-119	7·9	9·1	8·5	7·8	10·0	8·9	4·2	4·2	4·2	12·1
100-109	20·9	18·3	19·6	16·9	16·0	16·5	21·3	18·2	19·8	27·6
90-99	43·2	40·4	41·8	45·5	39·0	42·3	50·1	52·5	51·3	20·9
80-89	19·3	25·8	22·5	23·4	30·0	26·7	15·1	17·4	16·3	14·5
70-79	5·4	3·2	4·2	5·4	4·0	4·7	4·1	5·6	4·8	8·1
Average I.Q.	96·79	96·43	96·62	95·14	94·9	95·1	96·6	96·4	96·5	98·7

deficiency confined to those of average or subnormal intellectual powers? The answer to this and allied questions is obtained from an examination of the I.Q.'s given in Table XI. These estimates of general intelligence were derived from individual tests (Stanford Revision of the Binet-Simon Scale) supplemented in some cases by a group test. Table XI shows the distribution of intelligence quotients of pupils specifically backward in

reading, spelling and written English and of a control group. Fig. 3 represents diagrammatically a sample distribution of I.Q.'s of pupils specifically backward in one subject, namely reading.

From the distribution of intelligence quotients it is apparent that there are few really bright pupils who are

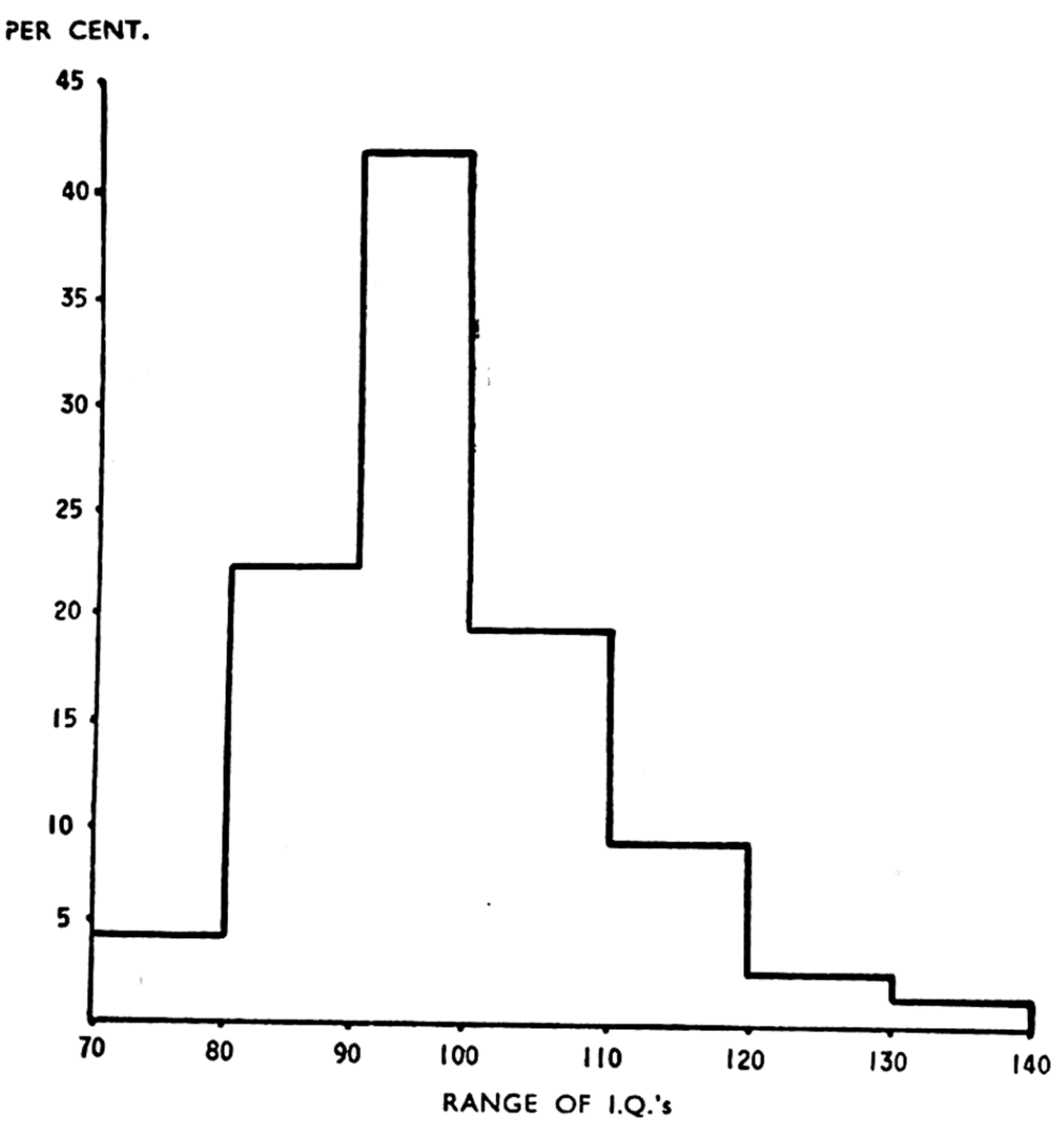


FIG. 3.—Distribution of I.Q.'s of 155 Specifically Backward Readers.

specially backward. Although specific backwardness is found at all levels of intelligence, from the supernormal to the very dull, it is the pupil of average and below average intellectual level who most frequently experiences intense specific disabilities in the primary subjects. It should be remembered, however, that such distributions of I.Q.'s as given in Table XI have been obtained with tests markedly verbal in type. In spite of oral instructions, even with the so-called non-verbal test, there is still verbalisation of the symbols used. Tests of a strictly non-verbal nature might

yield slightly higher I.Q.'s. It was noticeable with scholars of supernormal intelligence, even when there had been absence from school, adverse environmental influences, or inhibitory emotional forces, that there was sufficient intellectual power to minimise the effect of these handicaps. Occasionally, one found instances of bright pupils where external circumstances and a specific weakness combined to produce retardation of the most intense kind, but usually the weakness of supernormal scholars in particular subjects was well above the level of specific backwardness. Evidence supporting this conclusion is found in Terman's study of 1000 gifted children, all with I.Q.'s over 130, and of a control group representing a sample of the ordinary school population with I.Q.'s from 80 to 130. Information on subjects in which weakness (not necessarily backwardness) was shown by the gifted pupils was obtained from teachers, and results showed that " the gifted are weakest in subjects which require manual dexterity. Writing, art and handwork account for 68 per cent. of the weaknesses reported for the gifted as against 16 per cent. for the control. The control children are most often weak in the subjects requiring abstract thought. Arithmetic, reading, English and history account for 61 per cent. of the weaknesses reported for the control as against 17 per cent. for the gifted." [1]

Results from the present research together with Terman's study show the unitary influence of general intelligence on progress in the fundamental subjects and the relative rarity of specific mental deficiencies in producing specific educational disabilities.

Other Educational Attainments of Specifically Backward Pupils

An examination of the educational attainments of the specifically backward pupils reveals in many cases quite marked compensations in other subjects. Arithmetic was

[1] Lewis M. Terman and others. *Genetic Studies of Genius*, vol. i, pp. 263-264 (Harrap & Co., 1926).

the subject in which most pupils reached the highest achievement level. The average difference between spelling and reading ages and arithmetic ages for 150 specifically backward boys and girls was 2·4 mental years. At times the difference between verbal and arithmetical achievements for particular pupils was as much as 4·7 years. It was not uncommon to find examples such as these :

John S. *Chron. Age* $10\frac{7}{12}$.

I.Q.		104
Reading Age		7·3
Spelling Age		7·3
Arithmetic Age :	Mechanical	9·5
	Problem	10·2

George W. *Chron. Age* $10\frac{8}{12}$.

I.Q.		99
Reading Age		8·6
Spelling Age		7·6
Arithmetic Age :	Mechanical	10·5
	Problem	10·0

Doris C. *Chron. Age* $10\frac{2}{12}$.

I.Q.		96
Reading Age		7·6
Spelling Age		7·4
Arithmetic Age :	Mechanical	9·8
	Problem	9·5

Rene P. *Chron. Age* $8\frac{5}{12}$.

I.Q.		119
Reading Age		6·4
Spelling Age		7·7
Arithmetic Age :	Mechanical	8·5
	Problem	9·0

It was the high arithmetic achievements of some pupils and the success thereby obtained that enabled them to retain their self-confidence. This was most marked when the pupil went each day to a higher class for his arithmetic lessons, but it had the opposite effect when pupils, penalised for their poor reading and spelling attainments, had been denied the value and pleasure of promotion to a higher class. Sometimes, in these cases, they were doing arithmetic much below their actual ability. Not unnaturally, there were pupils whose reading retardation affected their level in problem arithmetic. They could do the problems provided they could receive help with the reading of them. The extent of this influence depended on the severity of the reading disability and the intelligence of the pupils—less intelligent pupils were handicapped more than brighter ones who could use even an inferior reading power to educe the pertinent relationships in the written problem.

A similar disparity was evident in most instances between verbal attainments and abilities in art and hand-work. Here, again, the satisfaction of creation and the praise for really good productions in art and craft served to

maintain confidence and interest for many pupils. The average difference between mental ages for reading and spelling and for art, for 70 pupils, where an attempt was made to obtain an objective assessment through median samples of pattern and imaginative work, was 2·1 mental years ; for handwork the difference was as much as 2·9 mental years.

CHAPTER VI

DIAGNOSIS OF SPECIFIC BACKWARDNESS

It has already been shown that backwardness in school is not simply an intellectual matter, but that it is a condition where normal school achievement has been prevented by a variety of interacting influences. Naturally, there are some cases, particularly the dull and defective, in whose backwardness the general intellectual factor assumes a role of dominant importance, but even with these pupils the nature of their backwardness often reveals maladjustment just as much as deficiency. True as this is for many generally backward children, it is almost universally characteristic of specifically backward pupils—their impoverished achievements in certain subjects must be regarded as personality problems. These pupils fail, not because of any general intellectual inferiority, but because of some difficulties in adjustment—difficulties arising from specific intellectual powers, from emotional attitudes, from physical conditions, or from environmental influences. Few of these possible casual conditions are very obvious, mainly because of the subtlety of their working and the intimate way in which they are related one with the other. It is apparent, then, from this brief reference to the nature of specific backwardness and from our fuller consideration of individual differences in children that case studies of specifically backward pupils are necessary for accurate diagnosis and effective remedial treatment. The main features of the diagnostic procedure adopted in the present investigation are set out below.

Plan for Diagnosis of Specific Backwardness

1. Measurement of General Intelligence.
2. Application of Scholastic Tests.

3. Application of Diagnostic Tests in the Backward Subject or Subjects.
4. Application of Sensory Tests.
5. Assessment of Emotional Characteristics.
6. Recording of Interests.
7. Brief Enquiry into Personal History.
8. Study of Educational History in the Backward Subject.
9. Talk with child concerning attitude towards disability and enquiry into possible anxieties or conflicts.

This scheme indicates the steps that should be taken to ensure a satisfactory diagnosis of each case of specific backwardness. Briefly, the scheme consists of a testing programme, ascertainment of temperamental traits, an enquiry into personal and school history, and a recording of the pupil's interests and his attitude towards his disability. The record thus provides information on intellectual and emotional characteristics, and on physical and environmental aspects of the pupil's backwardness.

Those who have had little experience of cases of mental maladjustment sometimes think that there should be "short cut" methods of diagnosing difficulties. In this field, namely, specific backwardness, they would refer to item 3 in the schedule and enquire whether application of diagnostic tests would not quickly and adequately solve the problem of the child's backwardness. Carefully constructed diagnostic tests are certainly one of the most useful items in a diagnostic programme, but they do not solve the problem ; they indicate the nature of the difficulties in a particular subject, but tell us insufficient about causation and, what is more important, about treatment. The fact is sometimes overlooked that, as abnormal mental conditions result from intensive interplay of emotional, intellectual and physical conditions, mental exploration and case study work are required to diagnose them effectively. The "short cut method" may be simple, but it is not sound.

1. Measurement of Intelligence of Backward Pupils

Reference has already been made in an earlier chapter to the methods used in the measurement of intelligence of backward children. Here it is simply necessary to emphasise the need for an individual intelligence test to provide not only an assessment of general intelligence but information on attitudes and emotional characteristics. For younger children and for children with a disability in the verbal field a non-verbal test is best, supplemented if necessary with a suitable performance test. But it has been my experience that, in all cases, the Binet-Simon Scale provides a wealth of valuable information on the pupil's emotional attitudes, on his special intellectual strengths and weaknesses, and on his methods and attitudes in dealing with different tasks.[1] One testee, for example, a boy aged $11\frac{6}{12}$, I.Q. 92, in answer to the remark, "Will you read this for me?" at once replied, "I can't read much," yet he managed to read the passage in 34 seconds with one error, afterwards recounting ten items. In reply to, "What is the date?" he said that he did not know, but upon the items being taken separately he gave correct responses. Again, in naming the months he enumerated seven and then gave up, saying that he couldn't remember the rest. A little encouragement, and he completed the series correctly. The hour's individual testing revealed, with this boy, more about his emotional equipment than any series of written tests could have done.

An accurate estimate of the general intellectual level of a case is of additional value in determining the rate and, at times, the line along which remedial measures should proceed. Remedial methods that are applicable to the bright child are often ineffective with duller pupils, although

[1] For supplementary evidence see "The Stanford-Binet Test as a Psychometric Method," by P. E. Vernon, *Character and Personality*, vol., vi, No. 2, December 1937.

in some respects they may be labouring under the same sort of scholastic disability.

2. Application of Scholastic Tests

In the selection of cases, scholastic tests in arithmetic, reading, spelling, composition, writing and drawing, were employed for a particular purpose; they were used to determine levels of school attainment of the prospective cases of specific backwardness. In this way, pupils whose backwardness was general were differentiated from those in whom it was specific, and pupils whose retardation was sufficiently intense were selected from those in whom it simply represented a small margin of unrealised intellectual power.

For the main issues of the investigation, standardised scholastic tests had, however, other values. In the first place, they yielded preliminary information on the nature of the pupil's backwardness. Thus, in reading, they showed whether the disability was primarily one of word recognition or whether there was in that aspect of reading a certain amount of ability handicapped by a more pronounced disability in comprehension. They also provided material for analysis of error. Naturally, none of this analytic work on errors in the standardised attainment tests was conclusive, but it was useful and suggestive in the first stages and pointed to the way in which diagnostic tests of a more searching kind could supplement the analysis already obtained.

Finally, attainment tests showed the educational fields in which pupils did best and, sometimes, those in which they had the strongest interests. Both these points had significance for remedial work. For example, one backward reader who showed both interest and aptitude in woodwork was stimulated to supplementary efforts in reading through the use of simple material relating to the construction of model aeroplanes.

3. Diagnostic Tests

The function of the diagnostic test is more searching than that of the attainment test; although the latter provides diagnostic information, its main purpose is to appraise, while that of the diagnostic test is to analyse. The diagnostic test estimates the pupil's proficiency in separate, significant skills which contribute towards success in the subject. It surveys the pupil's ability in the various elements which together constitute the total processes in the subject. The test should contain sufficient items to give a reliable sampling of failures and successes in the various steps in the subject. The steps included should be not only comprehensive but sufficiently well graded to enable the teacher or psychologist to discover, from an examination of the results, the exact level that the pupil has reached in the subject.

Reference to concrete examples of diagnostic tests reveals their special uses, while comparison with attainment tests makes clear how the two types of tests differ from one another.

An attainment test in reading might measure any one of the four variables: accuracy or speed in either word recognition or comprehension. Accuracy in word recognition could be gauged from a list of suitable words arranged in order of increasing difficulty (the number of words correctly read by a testee would then be compared with previously prepared norms derived from performances of other testees).

Speed of word recognition could be tested either by estimating the number of words read within a given time or by taking the time occupied by the testee to read a given piece of prose.

Comprehension tests for both speed and accuracy might require the testee to read selected paragraphs of increasing difficulty, and then to answer questions, fill in blanks, or follow instructions based on the passages.

In all its forms the attainment test places emphasis upon

the standard of accuracy and of speed reached by the testee. A diagnostic test, on the other hand, concentrates upon accuracy in the essential steps of the process. As reading depends upon visual and auditory analysis, discrimination and synthesis of word patterns, so diagnostic reading tests aim at providing information on these particular powers.

One test gives an indication of the pupil's powers of analysis and synthesis of words containing most of the common phonic units, whereas a second aims at revealing the nature of the pupil's perception of irregular words. A third test has as an objective an examination of the reader's directional attack upon words—whether he always commences at the left of the word and systematically works over it from left to right, or whether he sometimes inaccurately commences with the middle of the word or with a familiar pair of letters placed anywhere in the word. A fourth test is so compiled as to show the consistency of the pupil's ability to recognise a word just seen when accompanied by several slightly altered spellings of the word.

Such a testing procedure ensures that the majority of important steps in the process of reading are adequately analysed.

From the foregoing facts it will be seen that a diagnostic test is analytic in the full sense of the term. It deals with the essentials of a scholastic process and it seeks to disclose the exact nature of the errors made by the backward pupil. Naturally, this information does not fully and finally solve the problems raised by the pupil's backwardness, but it at least narrows the field, eliminating one possibility after another so effectively that we can proceed to discover reasons why he fails in particular elements of the subject. It is for this section of the diagnosis that we require supplementary evidence from personal interviews, assessments of emotional characteristics and records of interests, activities and school history.

4. Sensory Tests

Before proceeding to the main non-testing part of the diagnostic programme, rapid reference may be made to the use of sensory tests in the detection of causes of specific backwardness. Obviously, the two fields in which tests of sensory powers might be usefully employed are those of sight and hearing. It is not suggested that the teacher should investigate this aspect of the problem with great detail, but he should satisfy himself, either from the use of simple but accurate tests or from *recent* information from the School Medical Officers, that the backward child is not suffering from weakness of either auditory or visual acuity. Later sections of this book will show that sensory defects may be contributory factors to specific backwardness in reading and spelling.

Not a few cases of partially corrected, uncorrected and wrongly corrected defects of eyesight were discovered amongst the backward children, while slight degrees of middle-ear deafness following on continued conditions of septic tonsils characterised a few of the backward readers and spellers.

Before describing tests of vision and hearing it is advisable to add a note on the nature of defects in these senses. The term "defect" is meant to refer to actual organic deficiency, so far as this can be ascertained, not to psychological weakness. Thus defects of sight would include (*a*) strabismus or squint, (*b*) myopia or short sight, (*c*) hypermetropia or long sight, (*d*) astigmatism or unequal curvature of the lens of the eye, and combinations of these, particularly (*b*) and (*d*), (*c*) and (*d*). Defects of hearing would be chiefly those relating to middle-ear deafness. These should be differentiated from mental weaknesses, where there is no ascertainable organic deficiency, but where in the visual field certain inaccuracies of perception are exhibited while in the auditory field faulty discrimination of certain spoken sounds is markedly apparent. Additional tests are required for information on these important aspects of visual and auditory powers.

Tests for Defects in Vision

The usual test for myopia is made by use of the Snellen Test Type Cards. These consist of a card of black printed letters decreasing in size so that they can be just read when a person is standing at 60, 36, 24, 18, 12, 9 and 6 metres respectively from the card. For actual examination the pupil is asked to stand 6 metres (approximately 20 feet) from the card and to read aloud the letters commencing with the very large ones at the top of the card. Each eye is tested separately. The visual acuity is reckoned as a fraction,

$$V = \frac{d}{D}$$

$$\text{or} \qquad \text{Visual Acuity} = \frac{\text{Actual distance (6 metres)}}{\text{Normal distance}}$$

Thus the child who, from a distance of 20 feet, can see only the first line and no more has a visual acuity of $\frac{6}{60}$, one who fails after the fourth line has an acuity of $\frac{6}{18}$, while $\frac{6}{6}$ indicates perfect sight. Results of $\frac{6}{9}$ and $\frac{6}{12}$ indicate slight visual defects, while $\frac{6}{18}$ and more indicates marked defects.

In addition, the selected pupils should be given a test for astigmatism, using Verhoeff's Astigmatic Chart. This chart consists of a semicircle of black lines which radiate from the centre. All the lines are of the same thickness and blackness, but to the astigmatic eye certain sections seem blacker than others. Great caution should be observed concerning results from this test, for with numerous individuals suggestion and confusion enter into the testing procedure so that evidence of astigmatism may be indicated by the testee's replies when actually no such error exists. Not a few children and adults have been credited with a

degree of astigmatism which they did not have, owing to the shortcoming of a so-called optician.

All suspected defects should be checked with supplementary information. The teacher should find out whether the pupil ever has headaches and whether he has difficulty in seeing the blackboard or reading for a continuous period. The position of the head, the way books are held, any peering or squinting while reading, any soreness of the eyes, may each indicate loss of visual efficiency.

Enquiry should also be made about the regular wearing of glasses. One backward boy wore his glasses in school during the daytime but left them under the desk whenever he went home because the baby pulled them off his face. The consequent tax on visual accommodation naturally produced headaches and imperfect perception.

It should be remembered that many young children suffer from a slight degree of hypermetropia. This is a natural consequence of the immaturity of the eye and disappears as maturity is reached. It indicates the need for care of the eyes during childhood and for the prevention of strain. Pronounced hypermetropia should be regarded more seriously and the teacher should be on the look-out for pupils who have to focus print by holding the book at an abnormal distance from their eyes. These cases of hypermetropia are not always detected by ordinary sight tests.

Finally, teachers should always watch carefully for cases of squint amongst their pupils. Strabismus or squint is a turning of the eyeball within the socket of the eye due to the fact that the six muscles which hold the eye in position are not functioning effectively. The eye may turn either inwards or outwards, and either one or both eyes may be affected. The defect is most likely to occur amongst children who are highly strung and weak in neuro-muscular control, who already have myopia or hypermetropia, who are malnourished or who are recovering from the effects of an infectious disease such as measles or whooping-cough.

Once a case of strabismus is discovered, positive measures

should be taken to rectify the deficiency. This can be accomplished by rest, good food (particularly the use of glucose), covering the good eye and forcing the squinting eye to fixate correctly, and by correction of errors of refraction. The teacher should note the nature and degree of the squint, keeping a check on its condition. Some of the most backward readers and spellers are found amongst cases of fluctuating squint.

Tests for Hearing

The detection of defects of hearing is just as important as the detection of visual defects, but whereas the latter are relatively soon brought to the notice of the teacher or medical officer, the former (particularly in slight cases) may continue to persist for months or even for years.

For teachers the most effective measure of auditory acuity is the forced whisper test. The testee is placed with the side of his face towards the examiner at a distance of 20 feet or thereabouts. The examiner exhales and, with the residual air, whispers a number, which the testee has to write : thirty numbers are whispered in this manner. The testee's results are then compared with those of normal children of the same chronological age, and a rough estimate of auditory acuity is obtained by computing the ratio of the numbers heard by the pupil suspected of deafness to the number heard by the normal pupils. Amongst my backward readers several cases of slight deafness were discovered by this method.

For all specifically backward pupils suspected of deafness, it is, however, advisable to arrange that a test be made with a gramophone audiometer. These instruments are being increasingly used by progressive education authorities for the aural examination of the entire school population, school by school.

In this form of audiometer test a gramophone is used along with a supply of headphones sufficient to test forty or fifty pupils at once. The pupils are each given a card

Test No..... Date.....

—— County Council

PUBLIC HEALTH DEPARTMENT

AUDIOMETER

School..... Class.....

Name of Child..... Age.....

Hearing Loss.	RIGHT EAR		LEFT EAR		Hearing Loss.
	1	2	1	2	
30					30
27					27
24					24
21					21
18					18
15					15
12					12
9					9
6					6
3					3
0					0
−3					−3
HEARING LEVEL.....			HEARING LEVEL.....		

Remarks :—

and also a headphone to place over one ear—each ear being tested separately. As the gramophone emits a number, with a known volume of sound, the pupils write it down in space 1 on the card, opposite the line marked 30. Another number of the same sound volume is then emitted and the pupil writes down what he hears in space 2. Then numbers of known decrease in volume are emitted, and these the pupil records in the spaces opposite 27, and so on for pairs of numbers of decreasing volume opposite 24, 21, etc. A specimen of an audiometer record card is given on p. 103.

Numbers are written vertically and the volume of each row of figures decreases. A line of normal hearing has already been determined by experimentation, and pupils who make errors in numbers before this line are re-examined. Recent work has brought to light not a few cases of partial deafness and of nasal obstruction. In one case a boy who failed in the test was found to have a pea at the top of the nasal passage, while in another case of a very backward reader and speller there was a previously undiscovered loss amounting to almost half normal hearing.

5. Assessment of Emotional Characteristics

Difficulties in accuracy of assessment of emotional characteristics have already been noted in the opening chapter, and the value of the rating scale for classroom problems has been emphasised.

In the present investigation a number of traits was first considered, and from these a list was compiled of those qualities and attitudes which were most closely related to normal school progress in reading, spelling and English composition. Although an attempt was made throughout the diagnostic programme to obtain a complete picture of a pupil's personality, and particularly of his temperamental pattern, yet it was felt that the rating schedule should only contain those traits which had a direct bearing on progress in the above-mentioned subjects. The trait of leadership,

for example, was not included, for, although important in character education as a whole or in a study of vocational guidance, it is not of vital concern in the problem of scholastic backwardness. Naturally, it was not overlooked that many of the emotional characteristics are related to one another, that the boy who lacks power of leadership may labour under a feeling of inferiority, and that all traits are related to emotional stability and to personality in general.[1]

All related information was noted as the case study progressed.

For use in the actual rating scale nine traits were selected. These were :

1. Self-Confidence.
2. Persistence.
3. Assertiveness.
4. Attention to Detail.
5. Sensitiveness to Approval or Disapproval.
6. Concentration.
7. Self-regarding Sentiment.
8. Attitude towards School Work.
9. Emotional Stability.

In order to assist in obtaining objective judgments by minimising the " halo effect " (that is, the undue influence exerted by the attitude of a rater towards the ratee, either by marking too highly or too lowly), certain precautions were observed. In the first place, ratings were made by teachers and by the investigator, and supplementary evidence from parents was obtained. Only in selected cases was a rating schedule sent home to the parent. In most cases it was felt that more accurate information would be obtained from a simple questionnaire that could be used for supplementary or comparative purposes. This list of questions was compiled from those starred in Schedule C (p. 109). Thus the pupil was viewed from three different and independent angles. The relationship of these different sets of judgments is discussed later.

Secondly, a carefully considered rating sheet was compiled. On this sheet the extreme aspects of each trait were given in terms as concise as possible. In addition, a

[1] The pupil who shows deficiency in control of sexual impulses and anger may exhibit a general emotional instability which materially influences his work in school.

brief but comprehensive description of each trait was set out on a sheet accompanying the schedule, and these remarks were supplemented by a number of sample situations of the type the rater should bear in mind when rating the individual. Some of these situations referred to the child in his play and in his home, and some to his conduct in school. These measures were intended to influence the rater to reflect before he rated ; by them he was encouraged to construct a concrete picture of the individual with respect to the trait under consideration.

Although the schedule set out five degrees for differentiating in each trait, it was not intended that the rater should assess absolutely in these terms ; his judgments could range from " much above average " in a trait to the other extreme of " much below average," his exact rating being indicated by a cross on a line which ranged between these two extremes. Past investigators have found that absolute adherence to a five-point scale in terms of letters or figures tends to produce a greater halo effect.[1]

The schedule with traits and qualifying phrases for five different degrees of each trait is reproduced below, along with instructions for using it.

Schedule B

Rating Scale for Temperament

Instructions for using the Scale :

1. Please rate a pupil in each trait by making a cross on the line at the point which you consider most accurately signifies his characteristics in that trait.
2. Consider each trait separately, disregarding all others.

[1] *Genetic Studies of Genius*, vol. i, chap. xviii, " Trait Rating," by Florence Goodenough.

3. Carefully read the description and type situations relating to each trait as given in Schedule C.
4. Consider each pupil in relation to other children of the same age.
5. A cross may be put anywhere on the line; it need not necessarily be opposite a mark.
6. In the space provided underneath each trait enter supplementary information on the trait. Note if the testee varies in strength of trait in different situations.

TRAIT 1.—*Self-Confidence*

Extremely confident, amounting almost to "cocksureness."	Very confident of own powers. Self-reliant.	Confident.	Lacking in confidence. Timid.	Extreme lack of confidence. Over dependent. Declines responsibilities.

TRAIT 2.—*Persistence*

Extremely persistent. Never gives in. Shows pertinacity under difficulties.	Persistent. Strong willed.	Gives most things a fair trial.	Shows lack of will power. Easily discouraged.	Very easily discouraged. Weak willed.

TRAIT 3.—*Assertiveness*

Extremely assertive. Almost domineering. Never yields.	Insists on own rights. Pushes own ideas.	Puts forward own ideas. Yields when necessary.	Rather yielding. Does not force own ideas. Gets left behind.	Yielding. Servile. Inert.

TRAIT 4.—*Attention to Detail*

Extremely observant. Attentive to all vital details.	Observant. Attends to details.	Normally attentive to most details.	Unobservant. Misses many small but vital points.	Misses *most* details. Inaccurate. Extremely unobservant.

TRAIT 5.—*Sensitiveness to Praise and Blame*

Extremely sensitive to praise and blame.	More sensitive than average.	Normally influenced by praise and blame.	Rather indifferent to praise and blame.	Quite indifferent to praise and blame and to others' opinions.

TRAIT 6.—*Concentration*

Excellent power of sustained attention. Not influenced by most distractions.	Absorbed in what he does. Shows strong power of attention.	Concentrates normally except when distractions present.	Easily distracted. Weak power of attention.	Rarely attends for long. Short-term attention. Never really absorbed.

TRAIT 7.—*Strength of Self-regarding Sentiment*

Has exalted opinion of himself. "Superiority" attitude.	Thinks well of powers and achievements.	Satisfied with achievements. Knows limitations.	Inclined to underestimate powers and achievements. Feels inferior to others.	Extreme feeling of inadequacy. Inferiority attitude.

TRAIT 8.—*General Attitude towards School Work*

Absolutely absorbed in work. Tries very hard. Does extra school work at home.	Very interested in work. Eager.	Normally interested.	Idles along. Not moved by usual school interests.	Quite indifferent to all school activities. Laziness and inertness.

TRAIT 9.—*Emotional Stability*

Excitable. Highly strung. Emotional outbursts. Unstable.	Inclined to emotional outbursts.	Normal emotionally in control and expression	Shows weak power of emotional response in some directions.	Emotionally apathetic.

General Remarks

SCHEDULE C

Information for Use in connection with the Trait Rating Scale

1. *Self-Confidence.*—In its positive form this is indicated by self-reliance, ability to face difficulties, a feeling of assurance, ability to carry on independently, and a readiness to take responsibility. In games and physical activities it is shown by boldness and courage. In its negative state it takes the form of timidity, doubt, over-dependence and lack of assurance.

The child who has confidence tries to proceed with a minimum amount of guidance. The child lacking in confidence must be aided constantly; the former likes to see what he can construct or produce after instructions are clear; the latter requires spoon-feeding and actual assistance with his projects or problems.

Type Situations.

* (1) Is he afraid of the dark?
* (2) Can he look after himself (in personal habits) and his own possessions, or must he have people always helping him?
* (3) Does he travel in a tram or bus by himself? (only pertinent if case is over nine years of age).
* (4) Does he talk freely to new visitors?
(5) Is he good at games? Can he swim?
(6) Does the pupil answer with ease and assurance during oral lessons?
(7) Is the pupil good at dramatisation, and reading in front of the class?
(8) Does he tackle new tasks well or does he constantly ask his companions and the teacher?

2. *Persistence.*—This is indicated by the way in which a pupil keeps at a task and by a desire to master new material, and to surmount difficulties. It is shown by pertinacity in carrying on even under unfavourable conditions. Normally, it is associated with strength of will power.

Those who lack persistence easily give up, are quickly discouraged, and are unduly swayed by the opinions of others. They procrastinate and offer excuses for not completing tasks; they are always eager to try something new but not to persevere with it.

Type Situations.

* (1) Does the pupil keep at puzzles until he can do them or does he soon give up?

* (2) When he makes up his mind is he easily dissuaded from his intention?

* (3) Does he give up quickly in his play if something goes wrong? *E.g.* If he loses a piece of material or cannot find some apparatus.

* (4) Will he accept advice from others? Does he always keep to own ideas about matters?

* (5) Is he very keen on finishing tasks that he commences?

* (6) Does he make excuses to get out of work?

* (7) Is he easily discouraged if he fails in a project?

3. *Assertiveness.*—Degrees of this trait are indicated by the way in which the pupil puts forward his ideas, insists on being heard or in taking a share in duties, and in keeping to his just rights. Protests against injustice and requests for individual expression signify a normally assertive attitude. The weakly assertive pupil is yielding and almost servile. He agrees with others and does not defend his ideas vigorously even when he feels them to be right. He is content to be led.

Type Situations.

(1) Does the pupil always take the opportunity to express his opinions?

(2) Does he keep to his own ideas when talking to
  (*a*) Equals?
  (*b*) Superiors?

(3) Does he lead in games or activities or is he content to take a minor part?

(4) Does he wish to show his abilities in clubs, etc.?

(5) Does he persist in getting a mistake or an injustice righted, or does he just talk about it and remain inactive?
(6) Does he shop well or will he accept anything that is given to him, and believe any excuse that is made?
(7) Is he meddlesome and interfering or is he quiet and retiring?

4. *Attention to Detail.*—This is closely allied to observation, but appears to be more of a temperamental than an intellectual characteristic. It is shown in attention to points of difference and similarity in school materials and methods, for example, in words and diagrams, in drawing and painting. It reveals a certain power of analysis and is shown in ability to seize upon small but significant points. In some instances it may be related to general æsthetic attitude, a desire for neatness and system. Those who are very weak in this trait not infrequently reveal carelessness in work, habit, dress, and even speech. The attitude may arise from impetuosity and impulsiveness.

Type Situations.

(1) Does the pupil memorise carefully and exactly?
* (2) Is he careful in dress and speech?
(3) Is he observant in detecting differences in words and in following experiments?
(4) Does he consider details in his handwork?
* (5) Is he attentive to important details at home?

5. *Sensitiveness to Approval and Disapproval.*—Naturally, pupils differ in their reactions to praise and blame, but at one end of the scale are some who appear to be mildly indifferent to either influence, while at the opposite end are those who show marked reactions to both influences. For expression of normal intellectual powers this latter group require a constant nutritive of praise, while censure or failure seems to throw them into a state of emotional tension which inhibits adequate expression.

Type Situations.

* (1) Does the child try very hard to please people?
* (2) Are his efforts very dependent upon what people say to him?

* (3) Is he despondent or unhappy if censured or punished?
(4) Does he do very much better work if he is liberally praised, or does he relax and lower his standard of work?
* (5) Does he adopt slavish or ingratiating motives to get people to think well of him?
* (6) Does he become antagonistic and rebellious in the face of disapproval?

6. *Concentration.*—This is shown by power of sustained attention when engaged on a task. It is revealed in ability to attend in face of distractions. In written work, in blackboard demonstration or in play, pupils show concentration by the continued and connected way in which they pursue the activity in hand; constant breaks and passing attention to other objects or activities reveal weakness of concentration and is shown by careless inaccuracies.

Type Situations.

(1) Does the pupil look about him much during arithmetic lessons?
* (2) Does he follow instructions carefully or does he carelessly confuse them?
(3) Does he follow blackboard work carefully and continuously to the best of his ability?
* (4) Is he intent when making something, and continue in the face of distraction?
(5) Does he read intently, or is his attention constantly diverted?
* (6) Does he tend to daydream?

7. *Strength of the Self-regarding Sentiment.*—This represents an individual's opinion of his own powers and attainments. Its degrees vary from the pupil with a highly exalted opinion of himself to the one who feels inadequate and inferior. The strength of the sentiment is influenced by physical fitness, intellectual powers and the attitudes of equals and superiors. Success and failure, praise and blame, have a bearing on the nature of its development.

Type Situations.

* (1) Does he boast about what he can do or has done?
* (2) Does he try to belittle other people's efforts?

* (3) Does he cover up weaknesses by pretending he knows everything, saying, " I know," " I understand " ?
* (4) Does he belittle his own efforts and achievements ?
* (5) Does he make excuses, saying that he cannot do this and that ?
* (6) Is he timid, nervous, or apprehensive of his ability to obtain success in new projects ?

8. *Attitude towards School Work.*—There is little need to define this or to provide type situations. An important point is that the teacher should note inequalities of attitude, where, for example, the pupil is generally apathetic towards school work but markedly interested in arithmetic, or where a pupil is generally interested but indifferent towards success or failure in one subject.

9. *Emotional Stability.*—This means the general way in which the pupil expresses and controls his emotions. Emotional states normally expressed and adequately controlled are a sign of stability, while constant outbursts, excitability and impulsiveness signify a certain amount of instability. Emotional subnormality may be manifested also by inertness and apathy, an inability to be stimulated by the incidents, interests and incentives that arouse normal pupils.

Type Situations.

* (1) Is he inclined to cry much over small matters ?
* (2) Does he burst into temper easily ?
* (3) Is he unduly afraid in situations where many children of his age do not show fear ?
* (4) Is he inclined to worry unduly ?
* (5) Is he quickly excited over minor issues ?
  (6) Does his standard of work or power of concentration show marked and rapid variations from day to day ?

The list of questions sent to parents on these temperamental and character traits was compiled simply from those type situations which had special reference to home environment. It contained questions (starred ones of Schedule C) which most parents could at least answer even if the information they provided was not always

absolutely reliable. Sometimes it was the divergence in estimates between parents on the one hand and those of investigator and teachers on the other that provided the most useful line of enquiry. At other times the agreement between investigator and parent, contrasting with the different opinion of the teacher, was an illuminating source of information with regard to the pupil's school attitudes.[1] In all cases parents were invited to give answers as fully as possible to the questions, not just "yes" and "no" replies; for this reason a space of three lines was left after each question on the list sent to parents.

6. Recording of Interests

An enquiry into the backward pupil's interests, educational, recreational and occupational, was deemed an important supplementary section of the diagnosis of his difficulties. In preliminary case studies it was found that information derived from this source had a threefold value. In the first place, it provided supplementary evidence on temperament and character. Secondly, it enabled the investigator to initiate action that helped in reorienting, where it was necessary, the child's attitude towards his disability. Thirdly, the information provided a useful indication as to the nature of the material to be used in remedial work; this was particularly suggestive with some backward cases of spelling, of reading and of composition. Thus a list of questions relating to interests in school work, in play, in the cinema, in travel, in reading, and so on was compiled and used at a personal interview. The questions selected are set out in Schedule D. The pupil was encouraged to speak about his interests, and notes were made of all relevant information.

[1] A word of explanation is needed for those who doubt the value of information derived by a trait rating method. Means of combating possible sources of inaccuracy have already been discussed; here it is sufficient to say that few investigators take all ratings at their face value. What they most desire are starting points for study obtained from objectively worded data rather than vague statements about vaguer terms which differ from person to person.

Schedule D

Schedule for Recording Interests of Backward Pupils

1. Which school subject do you like best? Why?
2. Do you do any painting or drawing out of school hours?
3. Do you ever make anything?
4. What do you like doing best at home?
5. What do you like doing best at school in the playground?
6. What would you like to be when you grow up? Why?
7. Do you collect anything? What is it?
8. How do you obtain material for your collections?
9. How do you keep your collection or preserve it?
10. Do you like reading?
11. When do you read in your spare time?
12. What do you read?
13. Tell me the names of any books, papers, magazines, or newspapers you have read during the last four weeks?
14. What games do you like best? Why?
15. Do you ever go for short journeys from home? What do you visit? Why?
16. What country would you like to visit most?
17. Do you belong to any club or organisation?
18. How often do you go to the pictures? What kind of picture do you like best?

7. Brief Enquiry into Personal History

The personal history questionnaire was a short list of questions concerned with those aspects of the child's home life and development that might possibly have a bearing on his specific backwardness. The first section related to family facts. These questions were designed to discover whether the backwardness was in any measure a family

failing and whether the parental standard in and attitude towards the particular school subject was such that a plan of remedial work for home hours could be successfully carried through. The second section dealt with the child's physical history, his previous schooling, and a few relevant temperamental traits. In all, the schedule, which is reproduced below, contained only twenty-four questions.

Schedule E

Family and Personal History Sheet

A. 1. Nationality of Parents. Mother.....
Father.....

2. Number of Children in Family.
Boys..... Ages.....
Girls..... Ages.....

3. Father's occupation.....
4. Can both parents read? Good. Fair. Poor. (Underline one word)
5. Does the father or mother suffer from the effects of any serious illness, defect, or disorder? .....
6. Have or had parents, or any children, a speech defect?
7. Did the father have difficulty with ..... at school? (If so, state why?)
8. What is his ..... now? Good. Fair. Poor. (Underline one word)
9. Did the mother have difficulty with ..... at school? (If so, why?)
10. What is her ..... now? Good. Fair. Poor. (Underline one word)
11. Did any brothers or sisters have difficulty with .....?

B. 1. Has the child ever suffered from any serious illness? (If so, give details)
2. Has he ever had a shock or an accident? (If so, give details)

3. Is the child nervous, or has he had any nervous complaint like St Vitus' Dance, or Squint?
4. Has he ever had trouble with his eyesight?
5. Has he ever had trouble with his hearing?
6. Has he ever had trouble with any speech defect?
7. Has he ever had trouble with enlarged tonsils and adenoids?
8. Does he worry about anything very much? (If so, give details)
9. At what age did child start school?
10. How many schools has he attended? (Give dates and names)
11. Does he like going to school or does he complain of certain things in the school?
12. Has he ever been absent from school for more than a month?
13. Does he ever do ..... at home?
    Does he ask for help?
    Does any one help him?

This form was sent home, the spaces in A 7, 8, 9, 10 and 11 being filled in with the name of the subject in which the child was backward, with an explanation to the parents of what was being done for their child and soliciting their co-operation in the matter. In doubtful cases the head teacher invited a parent to the school and the sheet was completed at the ensuing interview. There were extremely few instances in which parents refused to assist by supplying particulars. Naturally, in some cases no satisfactory information was found for effective use in the diagnosis, but on numerous occasions the list was instrumental in unearthing evidence of early influences, of parental attitudes and of specific difficulties which had an important bearing on both cause and cure. Indication of factors such as frequent change of school, of paternal and maternal weakness in English or arithmetic, of a past speech difficulty, and of a now remedied sensory defect were extremely helpful. For remedial measures, too, one obtained guidance from parental

attitudes and home conditions. For example, one timid junior schoolboy, who suffered from a speech defect, was being punished by his mother, in the belief that this was the right treatment for his paucity of attainment in spoken and written English. In another case of a boy who had been absent for twelve months from the infant department and who now found himself floundering in the junior department, the parents were overjoyed to think that the child was receiving some special individual consideration, and were willing to do all in their power to co-operate effectively in home remedial work.

8. Educational History in the Backward Subject

Not less suggestive than the personal history sheet was the list of questions asked in connection with the child's previous schooling in the particular subject in which he was backward. The information from this source also proved invaluable both for diagnostic and remedial purposes. The questionnaire, as set out below, was answered by class teachers in collaboration with certain teachers in the infant department.

Schedule F

Educational History Sheet

A. *In the Infant Classes.*

1. Do you think home conditions were satisfactory while he was in these classes? Consider three aspects—(*a*) literary, (*b*) play (toys, pictures, materials), (*c*) development of personality.
2. At what age was formal work begun?
3. By what method did he learn to read?
4. Was he backward in.....?
5. Was his attendance regular?
6. To what do you ascribe his backwardness? What particular physical, temperamental, intellectual or social factors were noticeable?

B. *In the present Department.*

7. Has pupil ever failed to be promoted?
8. Has he ever "skipped" a class?
9. Has his attendance been regular?
10. Has he always been backward in ..... ?
11. Has any individual remedial work been done? (Give details)
12. Has he shown any improvement?
13. Does he express himself *orally* as well as other pupils of the same age?
14. Which aspect of ..... is he most backward in?
15. What is his attitude towards his disability?
16. What are his characteristic weaknesses?
17. Has he ever been scolded, punished or detained for his backwardness in ..... ?
18. To what do you ascribe his backwardness?
19. Give fully any further information bearing on his backwardness.

Information gathered from this schedule was in most cases reliable and enlightening. Not infrequently its main value lay in the various emotional influences that were revealed by the teacher's attitude towards the disabilities and by observation of the pupil's reaction to backwardness over a number of months. Thus failure to be promoted, or handicaps occasioned by the backwardness, such as extra work during playtime, or punishment in the form of long, useless repetition of errors, had to be considered in making a fresh start with the pupil. In addition, the characteristic weaknesses of the pupil, as diagnosed by the teachers, and the amount of remedial work already done, its nature and its result, all had distinct bearing on future remedial measures.

9. Personal Interviews

Formal interviews at which notes were taken were not conducted until after a week's acquaintance with the child.

The tests, many of them carried out in a play spirit, served to minimise the artificiality of the situation and to dissipate any apprehension on the part of the pupil. When rapport had been established, when allowance could be made for exaggeration and provision for encouragement, then, and not until then, was the child questioned extensively.

A start was made with Schedule D, which contained questions relating to the child's interests. This served as a useful shock absorber and stimulated children to talk about themselves. Most pupils were ready to recount their various recreational and scholastic activities.

Anxieties, Conflicts

It was not until a second interview that topics which might have had a negative emotional attachment were introduced. The child was encouraged to talk about his home, about his fears and his worries, or about what he considered were the anxieties or apprehensions of his parents. By subtler means an estimate of the harmony of the home was obtained. The pupil was unobtrusively led to reveal the attitude of his father and mother towards him and towards other members of the family. From all such information useful diagnostic points were gleaned. Thus, there was an instance of a girl, aged eleven, who was reacting badly to the hysterical outbursts of her father, due largely to war influences but vented as an object of expression on the reading and spelling disability of his daughter, who was afraid of the home coaching that the father endeavoured to give. The backward pupils were asked to relate a typical week-end's activities of their doings and thoughts at home, at clubs, in libraries, on playing fields and at the pictures.

Finally, evidence was collected in an unobtrusive way on the pupil's attitude towards his teacher and what he considered was his teacher's attitude towards him. He was asked about his backwardness, what he considered it was due to, how it arose, whether he was getting sufficient help with it and whether he really wished to overcome

it. The attitude of other children, and of his parents, towards his disability was also included in the discussion.

Here again the persistent and patent effects of emotional factors were apparent.[1] There was evidence of clear-cut cases of temperamental clash with teachers, of children who resented being sent on errands during lessons on subjects in which they were backward, of pupils who were discouraged because they were given insufficient consideration and help in their backward subject. In other instances conditions both at home and in school had caused the child to become indifferent towards his disability.

So marked were the emotional aspects of the whole problem of specific backwardness observed in this, the interview, and the supplementary schedules, and so constantly did they obtrude themselves, that one was almost inclined to minimise the intellectual aspects and neglect the error diagnosis in the belief that all the pupils really needed was a fresh start, a fresh attack made from their point of view, early success, and actual evidence that they could overcome their handicaps.

[1] Teachers will find Dr A. Bowley's book, *The Natural Development of the Child* (Livingstone, 1943), a most useful supplement to this chapter, also her recent books *The Problems of Family Life* and *The Psychology of the Unwanted Child* (Livingstone, 1947). See also *The Young Child and his Parents*, Z. Benjamin (University of London Press, 1947).

CHAPTER VII

ABILITY IN READING

FEW people would challenge the statement that reading is the most important subject in the curriculum of the elementary school; success in this subject conditions, to a large extent, progress in most other subjects and, as recent studies show, influences the whole attitude of the pupil towards school life. Thus progress in reading in infant and junior classes becomes a basic intellectual and emotional problem—failure in the subject resulting not infrequently in general scholastic backwardness or emotional maladjustment. So marked is this relationship between mastery of reading and school work in general that many teachers, and not a few parents, have come to regard degree of mastery of reading as indicative of degree of general intellectual powers. We have, however, realised as the result of studies of the reading process and of reading disability that the relationship between reading ability and general intelligence is by no means absolute; there are almost as many subnormal children who read well as there are normal or supernormal pupils who fail to read adequately. Educational research has demonstrated that there are numerous specific factors, intellectual and emotional, physical and environmental, that enter into reading. It is essential that those who teach reading, or attempt to help backward readers, should have a clear conception of the reading process. Hence consideration will be given in subsequent paragraphs to the reading process and to conditions which make for success in reading.

THE PSYCHOLOGY OF THE READING PROCESS

Experimental studies of reading have shown that the eye traverses the printed material in the lines by a series

of movements and pauses ; there is a movement, then a pause, and so on until the line is completed when the eye returns to commence a new line. No recognition of words takes place while the eyes are in motion ; it is not until a pause or fixation is made that actual perception of words or parts of words is performed. Now the number and duration of fixations during a line is dependent upon the difficulty of the material and upon the age and maturity of the reader. Photographic eye studies of reading by Gray and Buswell have shown wide variations in fixation for children of different ages and reading levels. Thus records [1] of two different pupils in the first grade (chronological age 7+) reveal these facts :

	Average fixations per line.	Average duration of fixations in 25ths of a sec.	Average regressive movements per line.
Pupil A . . .	7·0	6·8	6·8
Pupil B . . .	20·8	10·3	6·0

A comparison of plates of their eye movements is shown in Fig. 4.



FIG. 4.—Photographs of Eye Movements of Backward and Normal Readers.

Differences in attack on words, and the nature of forward and backward eye movements is well exemplified in the two samples.

In general, Buswell's records show that fixations made

[1] Taken with permission from *Fundamental Reading Habits, A Study of their Development*, by G. T. Buswell. Supplementary Educational Monographs, No. 21, 1922, p. 14 and pp. 84 and 85.

by children of from six to thirteen years in reading a line of eight or nine words may vary from 20 to 25 in the case of the youngest pupils to 7 to 10 in the eldest, while duration of fixations may vary from $\frac{7}{10}$ of a second to $\frac{1}{4}$ of a second respectively. With backward readers fixations may be as numerous as 30 to 40 with a disproportionately high number of backward or regressive movements. During a pause or fixation the eye is directed towards a central point, which may be part of a word or even the space between the words. The amount perceived during these brief pauses varies with the maturity of the reader and the difficulty of the material—actually the amount clearly perceived is small, a short word or part of a long word, but the field of partial recognition may be as much as four words. The degree of recognition becomes less distinct away from the centre. It would seem that one distinction between the normal and backward reader lies in the nature of this partial or hazy recognition, the backward reader is so taken up with a single word analysis or perception that he approaches new words from an uninfluenced viewpoint. Naturally, there is from fixation to fixation a certain amount of overlap, which assists in blending words and groups of words together, and in thus establishing relations of meaning between them.

The amount perceived and the amount recognised during a fixation have been termed the *span of perception* and the *span of recognition* respectively. From foregoing points it will readily be seen that they are connected with speed of reading and degree of comprehension—not absolutely, of course, for meaning of and familiarity with the words themselves are the greatest aids in rapid, well retained, silent reading. Experimental evidence shows that formation of span of perception is dependent upon intrinsic physiological and psychological factors, but that unfavourable conditions such as too early and too pronounced emphasis upon letters or parts of words, or a too early introduction to difficult material *may* have a deleterious influence upon the formation of normal perceptive span.

Thus age, method, and material for beginning reading are closely connected with the formation of normal span of perception.

It might at this juncture be advisable to point out that eye movements, forward and regressive, and spans of perception are characteristics of the reading process, not causal factors init.[1] Excessive fixations and a narrow span of perception may be symptoms of weak reading ; they are not causes of it. For these we must make deeper analysis into mental and physical equipment. At the same time symptoms help in diagnosis. For example, a disproportionate amount of right-to-left eye movement attack on words, or a very short span of perception, would provide useful diagnostic information, viewed in its correct perspective with other factors.

Means by which Children Recognise Words

The first obvious factor in the recognition of a word is its total pattern. In this, length plays a part, thus " box," " only," " monkey," and " sixpence " all present quite different patterns. Further, the nature of the letters, particularly projecting ones, is important, thus " ate," " all," " one," and " eye " are distinguishable. Although each word has its characteristic configuration it would seem that young children are easily led astray in their early reading by similarity of configuration. There is a correlation of $0{\cdot}806 \pm 0{\cdot}02$ between reading errors due to this factor and total errors made. The natural corollary to this information is that children in their early reading experiences should be introduced to words with a variety of structure, and that words like " is," " on," " at," " in," " of," " or " should, as far as possible, appear in different and well-separated lessons. Although " The rat sat on the mat by the cat " approach in reading instruction has

[1] Those interested in this aspect of reading will find further information in *The Experimental Study of Reading*, by M. N. Vernon, particularly chap. iv (Cambridge University Press, 1931), and also *Supplementary Educational Monographs* Nos. 17, 18, 21, 22, 23 and 30 (published by the University of Chicago).

certain values, we are causing unnecessary difficulties for the child in the first stages if we pack his reading vocabulary with too large a number of similar word patterns. If he aims at quick perception (surely one of the major objectives in teaching reading), then errors will inevitably follow, and he will be forced into a letter-by-letter analysis to procure recognition. With not a few children, especially duller ones, a selective phonic approach appears to be a very useful one, but even then let the sentence be "The cat sat in the frying-pan," [1] complete with humorous drawing.

In addition to the whole pattern of the word, particular letters in words have perceptual values for young children. For example, in recent reading tests I found that a large number of young pupils, including weak readers, could read "little" when they could not manage "for" or "put"; enquiry revealed that some remembered the "tt" in the middle, while others were attracted by the two "l's." Planned experimental studies [2] on this aspect of recognition provide evidence of a similar kind; pupils were able to recall "box" by the funny cross, or "monkey" by the letter y. Probably this point has greater significance in early reading stages than later, when total and particular pattern become more fully blended in the recognition of most words.

A second means by which words are recognised is by their phonic constituents—an all-important clue for young pupils. It is safe to say that unless the printed word is linked with a sound which finds a place in the speech experience of the child then it will not be retained.[3] The importance of sound in learning to read and to spell should not be underestimated; the relationship is strikingly borne out by the almost complete failure in reading of those children with auditory defects of either an organic or

[1] See A. I. Gates and E. Baeker, "A Study of Initial Stages in Reading by Pre-School Children," *Teachers' College Record*, November 1923.

[2] L. Meek, *A Study of Learning and Retention in Young Children* (Bureau of Publication, Teachers' College, Columbia University, 1925).

[3] For a sensible viewpoint on this see *The Psychology and Teaching of Reading*, chap. ii, by E. W. Dolch (Ginn & Co., 1931).

mental type. This does not mean that sound elements of words should receive the major emphasis in learning to read—upon the merits and demerits of phonic methods we shall dwell at a later stage—but it indicates that some methods may place insufficient emphasis upon phonic analysis of a selective and scientific kind. (In the present investigation there were as many backward readers suffering from insufficient phonic instruction as there were those labouring under an over-emphasis upon it.)

With most young children the recognition of words is aided by some recall of their auditory constituents, for the world of language is for them closely connected with sound images. The short cut between visual symbols and meaning does not really develop until reading experience is considerable. There must be a word-sound basis (not necessarily letter sound) in the early stages of reading. We have to use the extensive store of word sounds that most children have in order to tackle the problem of the visual symbol. This brings us then to two more means by which the word is recognised, namely, through articulatory elements, *i.e.* through saying the word, and through the meaning of the word.

During the early years of learning to read many pupils accompany their reading by a certain amount of semi-articulate speech, a prop which provides a basis for recognition. To a degree differing with the method by which reading is taught, and with the age of the pupil, this prop is extensively and continuously used. Later the articulation becomes slurred and rapid during silent reading, but it would seem that it never entirely disappears; in later stages it degenerates into what is termed inner speech, laryngeal not overt in nature.[1] Even with adults, where the passage read is particularly difficult, or unusual, as in a

[1] With adults it is debated whether there is any movement in inner speech. See R. Pintner, "Inner Speech," *Psychological Review*, 1913, vol. xx, pp. 129-153. H. B. Reed, "The Existence and Function of Inner Speech in Thought Process," *Journal of Experimental Psychology*, 1916, vol. i, pp. 365-392. Agnes M. Thorson, "Tongue Movements in Internal Speech," *Journal of Experimental Psychology*, vol. viii, 1925.

foreign language, articulation is brought in as an aid to recognition. Research shows that with young pupils it is inadvisable to openly check semi-articulate speech, because of the danger of interference with word recognition. There is, however, a point when the child has mastered the words when overt lip movements may become useless accompaniments which impede the speed of reading; but in initial stages it is wise to foster understanding even at the expense of a slight loss of speed.

A fourth stimulus which aids in the recognition of words is the meaning and familiarity of the word and its contextual setting. This aspect of recognition of words is one that has been insufficiently considered in reading methods. There has been too much emphasis in early stages upon letters and words—not always meaningful words. Now that educational psychologists have revealed that reading is as much an emotional as an intellectual activity, there have been attempts to obtain the correct emotional atmosphere by a better selection of material. The young child, whose general language background is poor, cannot be expected to be interested in words and minute differences between them. We have realised that some children fail to read because they really don't want to read, not because of any intellectual deficiencies. For young children the word itself, the experience or situation with which it is connected, and its contextual setting, are of immense importance in building up reading attitudes.

In a recent study of word recognition in a boy of 5 years 9 months (I.Q. 101) Hildreth [1] reveals that meaning, familiarity and the pleasant associations of words are, for commencing reading, almost as significant as their visual or auditory characteristics—words like "Peter" (the boy's name), "engine," "pony," "ice-cream," "light," were easier to learn than words like "street," "drink," "one," "work," "house," "children."

[1] G. Hildreth, "An Individual Study in Word Recognition," *The Elementary School Journal*, April 1935.

The immense value of the contextual clue is apparent in remedial work with backward readers. When new words are taken each day embedded in simple material the pupils build up more effectively an improved reading vocabularly.

With all children there should be early emphasis upon the phrase and the sentence. Word drills should be used only sparingly to aid recognition, which should be tested in a variety of settings each demonstrating that the objective is to derive meaning from the printed page. In so far as meaning is linked with numerous activities some provision is being made for contextual aids in recognition.

Finally, the kinæsthetic experience of writing the word provides a means not only of learning it initially, but of recognising it later. The writing, printing or tracing of the letters in a word enables children to bridge the gap between the visual and the auditory aspects of the word, and to record in their minds its characteristic total and particularised pattern. This additional stimulus of movement enables pupils to experience the "feel" of the word from left to right, the natural method of perception. The kinæsthetic imagery thus produced will provide pupils with a useful manual cue for recognising (reading) and recalling (spelling) words from the point of view of orientation of pattern. There is a tendency in the teaching of both reading and spelling to neglect the kinæsthetic impression of words, and to spend most time over their visual and auditory forms.

Oral and Silent Reading

Before reviewing the main facts concerning the recognition of words in reading, it will be profitable to consider briefly the relationship between oral and silent reading. In oral reading, of which the young pupil does so much, there is what has been termed the eye-voice span, namely the distance between the point of eye fixation and the point at which the word is actually being read. In oral reading the eye is usually in advance of the voice, for

both meaning and pronunciation have to be determined before the word is spoken. Thus, in oral reading it is the voice that conditions the speed, while in silent reading it is the power of comprehension that determines the rate.

In the first stage of oral reading, eye, voice and extraction of meaning are all centred upon one word, but after this level has been left, we find, in comparing oral and silent reading of suitable materials, that in the oral form there are more fixations and regressive eye movements than in the silent form—oral reading is in general a much slower process. There is, too, the possibility of more interference with speedy recognition of words from head movements and extraneous body movements and from impediments in speech. For example, most stammerers read well silently, and quickly extract meaning from the printed page under silent reading conditions, but efficiency in all aspects of reading is drastically diminished when they are required to read aloud.

The motor processes in oral reading have not the same regularity as those in silent reading—the pauses for comprehension of meaning, the waiting for the voice to catch up to the eye, the backward movements from mispronunciation of words, all tend to upset the span that the reader normally employs in silent reading.

Now although oral reading is necessary during mastery of the mechanics of reading and may be an aid to speech training, it would seem that for accurate assimilation of meaning from the printed page—the final objective in reading—there should be an early introduction to silent reading. Once a certain proficiency in word recognition has been attained, reading is largely a matter of speed and comprehension through practice with suitable and varied responses. It is conceivable that oral reading continued too long will not only prevent individuals from acquiring correct silent reading techniques, but may impede them in the formation of habits of rapid recognition by the over-continuance of props once useful, now useless. Naturally, there must be, in the early stages of reading, considerable

emphasis upon perception, both visual and auditory, but it would seem that the most desirable method of reading is that which early includes in its scheme practice in getting meaning from phrases and sentences, and in making use of the information so derived.

Facility in Word Recognition

In summarising the information relating to methods of word recognition it is apparent that the perceptual process of recognising a word is an analytic-synthetic one. The child must be able to apprehend the total pattern of words, and at the same time notice points of similarity and dissimilarity between them. He must be able to perceive the particular patterns of "one" and "all," "giant" and "think" and at the same time differentiate "catch" from "patch" and "rain" from "rail." He is required to detect phonic elements in words and to blend these so as to produce the correct form of the word. At the same time, he must remember differences that exist when a number of different sounds have to be used for the same symbol, such as the variant values of "a" in "mat," "water," and "say." Obviously, a considerable amount of this differentiation and this analysis and synthesis in the fields of auditory and visual perception proceeds subconsciously and hence makes the problem of diagnosis of reading disability even more difficult. As the detection and recognition of phonic elements is largely dependent upon normal powers of articulation and auditory discrimination, it follows that if one of these should be faulty then the whole process of reading is retarded and in some cases breaks down entirely.

Coincident with these analytic and synthetic abilities in the visual and auditory fields there is the power to understand the meaning of the word and its meaning in relation to other words with which it is used.

The complexity of the process thus understood (there is no other school subject in which Spearman's noegenetic laws,

the perception of relations and the education of correlates manifest themselves so extensively), we are much better equipped to examine the reading abilities and disabilities of children. In many pupils it would appear that the basic factors in the analytic-synthetic procedure outlined above are perfectly developed and ready to function efficiently if a minimum of instruction and plenty of suitable material is provided. Pertinent to this point we may notice, firstly, how young some pupils are when they attain a degree of mastery over words—it is not uncommon for a pupil between the age of $4\frac{1}{2}$ and $5\frac{1}{2}$ to learn to read. Secondly, the number of pupils of 8 to 11 years of low general intelligence (I.Q.'s between 60 and 75), who learn to read indicates the existence of a perceptual maturity factor in reading which is not necessarily related to general intellectual powers. Thirdly, experience with the reading abilities of junior school pupils cannot fail to impress one with the automatism (accompanied by a high degree of accuracy) of the process ; pupils of 7 and 8 years of age will read correctly words they have not seen before and of whose meaning they are ignorant. These words are not always regular in form, for irregular ones such as "artificial," "melodrama," and "glycerine" may be properly pronounced. It may be urged that this is merely "barking at print" and that it is not indicative of real reading, but accuracy of word recognition is the basis of all reading, and, as I was able to demonstrate with such children, when the unknown words are embedded in material of a sufficiently explanatory kind most pupils are able to deduce their meanings.

Finally, questions arise as to why approximately 20 to 25 per cent. of the child population experience difficulty with this process of analysis and synthesis of words. Is it always due to inferior equipment with respect to visual and auditory powers of perceiving word patterns, or are adverse environmental influences at the base of some difficulties? To the elucidation of these problems we shall now pass.

CHAPTER VIII

DIAGNOSIS OF DISABILITY IN READING (WORD RECOGNITION)

PUPILS who, by use of the testing technique outlined in Chapter IV were deemed to be cases of specific backwardness in reading were first given two or more of four different reading tests. These were :

Test R 1. Burt's Graded Reading Vocabulary Test,[1] or Vernon's Graded Word Reading Test.[2]
Test R 2. Schonell's Simple Prose Test,[3] or Burt's Continuous Prose Test,[1] if a pupil showed by Test 1 that he had a mental age for word recognition of over 8·5 years.
Test R 3. Schonell's Silent Reading Test A [3] (for ages 7 to 11+), or
Test R 4. Schonell's Silent Reading Test B [3] (for ages 9 to 13+)

Test 1, consisting of isolated words increasing in difficulty, yielded a measure of accuracy of word recognition. Isolated words do not, however, represent the usual material that children have to read, and, although words lend themselves to suitable selection and arrangement as regards difficulty, it is essential to discover how the backward reader deals with continuous material. As there was no test of this, standardised for English children and suitable for young pupils and backward readers, the Simple Prose Test was compiled and standardised on 650 pupils for accuracy, speed and comprehension. It consisted of simple material containing a variety of vowel and consonantal

[1] *Mental and Scholastic Tests*, pp. 269-279 and Appendices I and III.
[2] *The Standardisation of a Graded Word Reading Test* (University of London Press), or graded word reading test in *The Psychology and Teaching of Reading* (Schonell).
[3] Appendix I.

combinations which formed the textual links for more difficult words, such as "fortnight," "recovered," "squirrel," "chasing." In this way the visual and auditory essentials in simple word recognition were tested along with the ability to use contextual clues. In addition to assessment of accuracy, an idea of speed of oral reading could be derived from the time norms, and a gauge of the amount understood could be obtained by asking fifteen simple questions based on the three paragraphs.

A record of all responses in these tests should be kept in a booklet, the errors being written down for later examination. In giving Test R 1 the qualitative results are noted in this manner:—A dot signifies that the word has been read correctly; if there is a reading mistake the actual error, or as close a phonic representation as possible, is written in the place of the word. The first 30 words of Test R 1 are as follows:

Age 4.	to	is	of	at	he
	my	up	or	no	an
5.	his	for	sun	big	day
	sad	pot	wet	one	now
6.	that	girl	went	boys	some
	just	told	love	water	things

A sample record—John A. C.A. $9\frac{1}{12}$—runs as follows:

.	.	.	.	.
.	.	.	on	.
has	.	.	dog	by
sigh	.	what	.	no
.	growl	.	does	.
.	.	lived	whether	.

Reading age 5·9.

For recording errors in Test R 2 it is advisable to prepare beforehand typed or cyclostyled copies of the material. Then, while the testee reads the properly printed passage,

the investigator writes all errors above the actual words on the copy, which is fixed afterwards in the record book.

The record of John A.'s reading of the first paragraph of the simple prose test is shown below :

MY DOG

(jumped) (O) (in) (pan) (tire)
One day my dog cut his leg on an open tin, so I
(pat) (dun) (ame) (rain) (showed) (Heard)
put him under my arm and ran to a shop. Here
(O) (home)
a man wound some rag round the cut. I then took
(put) (mad) (like)
my pet home and made him lie down in a box of
(storm)
straw.

His reading age on the test is less than 6·0, which, compared with 5·9 from the word test, shows what little use he makes of contextual aids.

Had John's reading age on the graded vocabulary test been more than 8·5 mental years, he would have been given Burt's continuous prose test and his errors would have been similarly recorded.

Diagnostic Information from the Graded Vocabulary Test and the Simple Prose Test

In addition to recording actual errors from these two tests, the investigator should make every effort to analyse the nature of the pupil's attack on words, since information on this aspect of the backward reader's powers constitutes the most vital part of the diagnostic programme.[1] The type of diagnostic information that should be noted and entered in the record book at the conclusion of each test is briefly outlined in the following paragraphs.

[1] A later section describes in detail diagnostic tests prepared specifically for this purpose.

(1) *Letter-by-Letter Attack*

Firstly, note should be taken as to whether the pupil makes a letter-by-letter attack on words. This may take either of two forms: (a) *the pupil may spell or say the words letter by letter*, in which case his recognition of words is very slow and his errors are of this kind:

r-o-d	pronounced	" rode "
m-a-k-e	,,	" makke "
l-o-v-e	,,	" loave "
o-b-t-a-i-n	,,	" obtin "
t-o-n-g-u-e	,,	" tongu " or " tonga "
b-e-w-a-r-e	,,	" bewar "

(b) *Alternatively, the letter-by-letter analysis might be a half-known and incorrectly applied phonic method by which the pupil attempts to give the isolated phonic sound of every letter.* In this instance errors are obvious, for the pupil applies to all words the same single sound values that he originally learnt for each of the letters a, e, i, o, u, y—" a " is pronounced as in " cat " without variation, " e " is pronounced as in " wet " without variation, and so on. Furthermore, there is evidence that the testee has little knowledge of vowel and consonantal digraphs and diphthongs; he simply sounds combinations such as " ea," " ou," " ch," " gr " and " oy " as separate letters, deriving little meaning from words containing them. The errors made by these children are exemplified in the following specimens:

t-h-o-s-e	pronounced	" toss "
w-a-t-e-r	,,	" watter "
s-o-m-e	,,	" somme "
s-a-i-d	,,	" sad "
c-a-r-r-y	,,	" cry " or " cari "
g-o-a-t	,,	" go-at "

(2) *Correct Phonic Attack*

There are backward readers who, failing in ability to recognise words as wholes, apply correct and extensive methods of phonic analysis. These pupils remember the usual consonant and vowel sound values of common digraphs and also apply a variety of sound values to single vowels, so that with material having phonetic regularity they read accurately, if slowly. Their recognition of words in the simple prose test proceeds as follows :

> Here a man w-ou-n-d - woud - wound some rag r-ound-round the cut. I then took my pet h-ome-home and made him lie d-ow-n-down in a box of st-r-aw - straw.
>
> After - a few three days he c-o-u-co-coo-cow-l-d cold put his p-aw to the gr-ou-n-d - ground.

This was the record of a girl aged $9\frac{8}{12}$, obviously slow, but up to the point quoted, her result contained only two errors. The word " could " occasioned a difficulty mainly due to the different sound value of " ou " from that just experienced in " wound " and " round."

Pupils whose power of phonic analysis is tolerably well developed will after " worrying through " the word " wound " usually succeed quicker with " round " and " ground," occurring later in the test, while those whose phonic experience is inadequate will view them as practically new words. This type of reaction—and the composition of the test provides for the possibility of others like it—should be noted.

(3) *Weak Auditory Analysis*

Still within the field of auditory attack on words we find pupils whose errors seem to indicate not only poor knowledge of phonic values, but also weak auditory powers of analysis and synthesis in the field of language. Their errors consist of numerous substitutions of vowels and omissions and transpositions of

other auditory units. Sometimes their procedure shows that even when they can analyse the word into its correct sound values they are unable to blend them or remember the constituent units or syllables. This type of weak reader is well illustrated by the following record :

(dug) (cot) (in)
One day my dog cut his leg on an open tin, so I
(pot) (ner) (run) (stop) (Where)
put him under my arm and ran to a shop. Here a
(wood) (cot) (ten)
man wound some rag round the cut. I then took
(put) (how) (don)
my pet home and made him lie down in a box of
(stor)
straw.

There is evidence of some visual confusion—very rarely does a profile of errors present a clear-cut case of either auditory weakness or visual weakness—but the bulk of mistakes in this instance are due to poor auditory powers.

The same girl, age $9\frac{10}{12}$, seldom makes more than a dissyllabic reading response even if the words contain four or five phonic units.

(4) *Visual Errors*

Next, are those backward readers whose errors have a predominantly visual basis ; they make auditory errors as well, but there is evidence of a faulty visual attack on words : they attempt to recognise the word by its total visual pattern or by some dominant visual characteristics. Sometimes the characteristics of the word that attracts them are at the beginning, at other times in the middle, and occasionally at the end ; thus errors may be of the nature :

" three "	read as	" there "
" stick "	"	" stand "
" catch "	"	" church "
" told "	"	" tried "
" some "	"	" came "

Frequently there is no consistent attack on a particular part of the word. It is seldom that the initial letter is wrong; most often the error is a combination of the first and last parts, as in "scordely" (scarcely), "stillness" (steadiness), "fought" (fortnight).

The investigator should, in spite of the mixed nature of the errors in many cases, pay particular attention to *the direction of the attack on words*, irrespective of the phonic or visual nature of the attempts at recognition, for occasionally one discovers pupils who make a large number of perceptual errors which start from the middle of the word and then proceed to the left or go from the end of the word towards the left. Naturally, omissions of initial letters or even syllables, and reversals of small syllables, are commoner with these pupils than with most backward readers. The relation of this to left-handedness, to changed-handedness, and to eyedness is discussed fully in a later section.

To aid investigators in initial diagnostic measures it is sufficient to mention that the partial right-left attack might start either from a phonic or a visual basis. Thus one of my cases, a left-hander of $12\frac{1}{12}$, would first sound the word correctly and then, selecting a dominant sound in the middle or at the end, proceed to tack on remaining letters working towards the left. A specimen selection of his errors demonstrates the tendency to reversal and partial reversal.

(bay) (god) (no) (po-pu) (ni)
One day my dog cut his leg on an open tin, so I
(up) (dun) (run) (There)
put him under my arm and ran to a shop. Here a
(down) (gar)
man wound some rag round the cut.

Elsewhere typical errors in his reading of the prose test are :

"ramble"	read as	"barle"
"playing"	"	"yaling"
"pot"	"	"top"
"was"	"	"saw"
"sad"	"	"has"

(5) *Use of Meaning of Words*

Finally, it is profitable to note the contextual clues that pupils use. Is their guessing intelligent and useful? Is it excessive and harmful, in so far as it has become a reaction that prevents a real attempt at recognising words? Or is it so little used that the child baulks at every new word, either laboriously attempting to analyse it letter by letter, or waiting for someone to help him with it?

To the temperamental factors underlying these variations consideration cannot be given at this step. That they exist in extreme forms amongst readers—from the boy who glibly guesses and easily extemporises, to one who stops at every step and seeks for help—is soon apparent to every investigator. Relative to this characteristic of oral reading, mention must be made of extraneous movements of finger, head and body, of variations in voice, and of abnormalities in breathing that are sometimes present. None of these are vitally connected with inaccuracy in reading, but they may be significant with respect to emotional factors and to later development of normal reading speed.

Sufficient has now been explained regarding points that should be noted during the preliminary testing. Vigilance is needed if both quantitative and qualitative data of a useful kind are to be gathered. Naturally, no hard-and-fast line can be drawn with regard to the backward reader's attack on words, for errors do not appear in clear-cut categories, and backward readers make many mistakes, but early indication of the predominant methods by which they endeavour to recognise words is invaluable for later diagnosis.

Level of Silent Reading

With most backward readers the third step is the application of the silent reading test for speed and comprehension, but with some pupils this step is unnecessary.

For example, in the case of John A., the backward reader initially cited (p. 134), reading attainments are so low that Test R 3 would have little significance. John took $6\frac{1}{4}$ minutes to struggle through the simple prose test, making no less than 59 errors ; although he is over nine years old, his full reading vocabulary consists of a few three-letter words and still fewer four-letter words.

With cases such as John—that is, all whose mental age for reading falls below 6·5 mental years—it is advisable to test their ability to name the letters of the alphabet, capital and small, and to give the usually accepted basic sound for each. Not that remedial work is to proceed from a letter or sound basis—with all very backward readers it is best to make a completely fresh word whole approach with material of their own choice, or at least intimately connected with their most vital interests, and to work back to phonic analysis later—but it is much better to know any deficiencies in knowledge of letters or common sounds before starting on a remedial programme. Not a few backward readers, even at the ages of eight or nine years, do not name all the letters correctly, while in writing and reading the percentage of backward readers of all ages who confuse letters is very high. An example of this is a boy, age $8\frac{10}{12}$, reading age 5·9, who failed to name " y," " v," and " z " correctly, and did not know the common sounds of " o," " i," " v," " r," " y," with the result that regular words like " rod " and " sit " were read as " rode " and " site." Moreover, he consistently confused in his reading the letters b, d ; p, q ; m, n ; t, l.

Comprehension and Speed compared with Word Recognition

So far, consideration of reading disability has centred round difficulty of word recognition and little has been said of speed and comprehension, equally important aspects of reading. As previously stated, the simple prose test, " My Dog," provided an estimate of speed and of amount

understood with material read orally, while Tests R 3 and R 4 yielded measures of speed and comprehension with material read silently. Indications from both oral and silent tests of the pupils' powers of understanding what they read had particular bearing on diagnosis and remedial treatment. For example, pupils who made these scores on the prose test :

	Age.	Time (mins.).	Errors.	Questions correct.
A. . . .	$7\frac{7}{12}$	5.2	40	0
B. . . .	$8\frac{6}{12}$	5.0	20	2

were more difficult to deal with than this type of backward reader :

	Age.	Time (mins.).	Errors.	Questions correct.
C. . . .	$7\frac{6}{12}$	7.42	44	8
D. . . .	$8\frac{9}{12}$	4.5	13	10
E. . . .	$8\frac{1}{12}$	5.34	26	10

Then there were pupils such as the following :

	Age.	Time (mins.).	Errors.	Questions correct.
F. . . .	7	1.16	1	5
G. . . .	$8\frac{7}{12}$	1.08	0	3
H. . . .	$9\frac{6}{12}$	1.35	0	0

These readers can certainly recognise words both quickly and accurately, but the relationships between the words are poorly perceived ; the nine-year-old girl (Case H.), who did not understand anything of what she read, is an excellent example of superficial word recognition.

At present we are concerned only with backward readers showing marked difficulties in WORD RECOGNITION ; the factors of speed and comprehension are considered in a separate chapter on ability and disability in silent reading.

DIAGNOSTIC TESTS FOR WEAKNESS IN WORD RECOGNITION

Having determined the backward reader's degree of disability in word recognition and his ability to use contextual clues to assist in recognition, and having gathered preliminary information concerning his attack on words,

we now need tests which will indicate more intensively the exact nature of his perceptual difficulties. We require information on his attainments and his ability in auditory analysis and synthesis of word forms and his attainments and ability in visual analysis and synthesis of word forms. For these purposes three additional tests are used.[1] They are :

Test R 5. Test of power of analysis and synthesis of words containing common phonic units.
[Test R 5*a*. (Only required if very poor results in R 5.) Test of the names of the letters and their corresponding sounds in their commonest form.]
Test R 6. Test of directional attack on words.
Test R 7. Visual word discrimination test.

Details of Diagnostic Reading Tests

Test R 5. *Test of the Power of Analysis and Synthesis of Words containing Common Phonic Units*

This test, which consists of eighty " regular " [2] words increasing in difficulty from simple phonic forms like " rod " to long words like " refreshment," is for estimating the pupil's ability in auditory analysis and synthesis of words ; hence it contains words with :

(*a*) Single short vowels, *e.g.* " get," " dug."
(*b*) Diphthongs, *e.g.* " cow," " boy."
(*c*) Common consonantal digraphs, *e.g.* " bright," " stick."
(*d*) Common vowel digraphs, *e.g.* " hear," " goat."
(*e*) Numerous phonic units, *e.g.* " remembered," " glittering."

[1] Set out fully in Appendix I.
[2] There is a certain arbitrariness in this designation. On the whole, the words were of a regular or regularly accepted phonic form.

Backward readers were taken to the point at which the investigator judged that he had assimilated enough information on the testee's phonic knowledge. Sometimes a reading of the first twenty words revealed the complete paucity of the pupil's phonic knowledge. It was then uneconomical to continue further. At other times it was necessary to give the entire test to discover those few phonic units in which the pupil was weak. If pupils were unable to recognise a word, they were asked first to spell and then to sound it. On further failure, the investigator sounded the word and then requested the pupil to blend it.

The test was useful as a means of providing information on the testee's knowledge of common phonic units. It was essential to try to discover whether the pupil was ignorant of the common forms because of lack of sufficient experience, because of refusal to apply himself during the early stages in reading, or because of an inability to master the phonic units due to delayed maturation in powers of auditory perception. Usually the first type of backward readers achieved some success in recognising words when asked to spell and sound them, and showed considerable aptitude in blending the words when the investigator sounded them. On the other hand, those pupils intrinsically weak in auditory perception continued to make a disproportionate number of errors even with such assistance.

Thus on Test R 5, Ronald C., age $9\frac{6}{12}$, reading age 6·0, made these errors in the first fifty words :

			(rode) (roude) rod
	(si-ing) sing		
(dog) dug	(wes) yes		(imp) nip
	(here) her	(sled) sold	(see) say
(cooch) (crock) clock			(strike) stick

	(there)			
.	they	.	.	.
	(rel)	(pol)	(wish)	(dig)
.	rail	pool	which	beg
	(groaned)			
(ce)	(grand)	(brit)	(fin)	(crid)
cow	ground	bright	fine	cried
(uncle)	(poke)	(are)		
until	pocket	our	.	.
		(park)	(me-at)	(don)
(third)	(be)	(bak)	(met)	(down)
thunder	buy	bark	meat	bone

The testee's ignorance of common phonic families is most evident in these errors, his difficulty with the "ow" in "cow," the "ou" in "ground," the "cl" in "clock," the "ea" in "meat," being specific instances where lack of knowledge rather than lack of ability held up his reading. In all cases he was able to read the words after blending them with the investigator; furthermore, where, for supplementary purposes, words of similar phonic values were presented, he could recognise them, as for example, "sound," "mound," "hound," given after "ground." It will be noticed that he tends to confuse "b" and "d," "c" and "s."

Additional verification of his normal power of phonic analysis is shown in his recognition of longer words, such as "broken," "remembered," and "refreshment"; he is successful provided the words do not contain an unfamiliar phonic unit.

It is clear that such pupils require a systematic revision of their knowledge of common sound combinations and practice with material which provides for the extension of such sounds to newer and larger words.

Quite different is the case of Sheila L., age $8\frac{5}{12}$, reading age 5·6 mental years, who makes little attempt to analyse words phonetically and who shows little ability for recognising the units when they are presented, or to

synthesise them into words ; thus her errors are of this nature :

(wind) win	.	.	.	.
(dum) mud	(singing) sing	(pet) keep	.	(rose) (rode) rod
(rag) dug	.	(if) fish	(nib) nip	.
(pot) mop	.	(doll) sold	.	(pay) say
(cock) clock	.	.	(glass) dress	(sick) (cake) stick
(look) book	(the) they	.	(chick) (cock) duck	(fox) spell
(pan) gate	(all) rail	(good) pool	(while) which	.
(ow) cow	.	(light) bright	(live) fine	(ride) cried

The nature of her word recognition is clearly revealed by an examination of her errors. She merely reacts to a single sound or letter or an isolated group of sounds or letters in a word ; thus a visual or an auditory unit in any part of a word serves to call forth a chance response. The single element may be in the beginning of the word, as, for example, when " find " and " meat " are read as " funny " and " man," they may be in the middle as when " gate " and " hurt " are read as " pan " and " mud," or they may be at the end when " dress " and " stick " are read as " glass " and " cake."

She shows little ability to analyse the words into their sound values, nor is she successful in blending the sounds into words when the former are given to her—g-u-m is called " mun," f-ind is called " fine," st-ick is called " sick."

Test R 5a. Test of the Alphabet and Corresponding Common Sounds

This test is used only if the pupil shows uncertainty in his knowledge of the names of the letters and of their corresponding sounds in their commonest form. Any such gap in fundamentals is most often noticed in Test R 5. Hence it is convenient with these pupils to turn during this test, or at the conclusion of it, to a systematic review of the alphabet in non-serial form, both for capital and small letters. At the same time the pupil is asked to give the usual phonic sounds for the letters.

The case of Sheila is again different from that of Alfred H., aged nine, reading age 7·5, who makes a satisfactory attempt at the visual forms of words ; the errors reproduced below show that it is only in certain details of words that he fails. He requires practice in noting significant details of words through the use of exercises in comparing words of slightly different structure.

Alfred makes such errors as :

(coast)	(while)	(quiet)
cost	whole	quite
(bile)	(glass)	(concert)
bowl	guess	cousin

In contrast to these are the errors of pupils whose obvious reactions are to guess at any unknown word rather than to attempt either visual or auditory analysis of them. Instead of making obvious efforts to recall the visual pattern or analyse the auditory form of words of which they are uncertain (*vide* Alfred H.), they quickly reply with any response at all. These differences in attack are in part attributable to differences in perceptual powers, but also to differences in temperamental attitudes.

Test R 6. Test of Directional Attack on Words

This test, which consists of forty-eight three- and four-letter words, was primarily intended to indicate the nature

of the backward reader's directional attack on words, but it also reveals the stability of his power of recognising such confusional groups of letters as "p," "q"; "b," "d"; "m," "w"; "n," "u." The test material is arranged in groups of four words of somewhat similar structure; for example :

bed	saw
dig	wash
bad	was
boy	raw

The weighting of possible confusions reveals any tendency or potential tendency to reversal or part reversal of words. A child who makes a careful left-to-right attack on a word and who uses his auditory powers to supplement visual perceptual powers rarely makes a reversal; those who rely on quick visual perception of an inaccurate kind are prone to a certain number of confusions; those whose incorrect habits of perceiving words lead them to commence in the middle of the word or at the last letters are bound to make more than an average number of reversals and partial reversals.

The average number of reversals and part reversals made by normal readers between the ages of 6·5 and 9·5 were obtained. Thus Tom H., age $9\frac{1}{12}$, makes ten reversals and part reversals—over 30 per cent. of his total errors. His record booklet shows this result :

(big) (did) bed	(hot) pot	(said) (has) sad	(our) who
	(pot) pit		(out) now
(ad) had	.	(tops) stop	(one) whose
	(no) on	(plan) lap	(cow) how
.		.	

		(run)	
.	.	rag	.
		(as)	(was)
.	.	gas	wash
	(on)		
.	no	.	.
(top)		(that)	(ran)
ton	.	what	raw
	(jolly)	(very)	(big)
.	job	every	pig
(our)	(but)	(yet)	(queen)
new	tub	yes	quite
(we)	(six)		(letters)
wet	sit	.	leap
(tram)		(ever)	(flet)
tar	.	never	felt

The tendency towards partial reversal and omission of the initial letter, is clearly demonstrated in this record of errors. One of the factors handicapping Tom in reading is the inconsistency of his visual perception of words ; he requires the assistance of a strong manual cue—writing and tracing—to build up a left-to-right attack on words. The nature of his perceptual inaccuracy is amusingly illustrated by his attempt with the group :

saw
wash
was
raw

He commenced by reading the first word correctly, then he called the next one " was," and, on seeing the third word, remarked, " Oh, here is ' was ' again." I enquired whether there was any difference between the two, and he intimated that one had " h " on the end of it, and on my asking what word it was, he said, " Oh, that must be ' wasn't '."

Test R 7. Visual Word Discrimination Test

This test yields further supplementary evidence on the visual perceptual powers of backward readers. It was constructed from twenty-five selected words, each of which was likely to cause, with different readers, different errors. The correct form of each word was accompanied by five incorrect forms, namely, forms with an omission of a letter, an addition of a letter, a transposition of one or more letters and substitution of a vowel and a consonant. The testee was shown the correct form, printed separately on a card, for five seconds, after which he had to indicate from the six forms on the printed sheet which one he had seen. Additional trials with the words were given where necessary.

Significant information—often verifying the presence of a weakness indicated in earlier tests—was obtained by using this test. For example, the result of Alfred H. (cited on p. 147) on this test showed that, of the nine words in which he made mistakes, six of the forms wrongly selected were transpositions, whereas Sheila L. (see p. 147) continued to show her haphazard perceptual attitude by making, in some words, almost as many wrong selections as there were wrong forms from which to select.

For example, with the words " babies," " thread," and " basket," she selected on successive occasions :

babeis, babiese, badies, and babes
thraed, threed, and threard
barkset, bosket, bashet, and bakest

as being the words she had seen printed on the cards. Obviously there is complete inconsistency in both the total pattern of the words she perceives and of their component parts ; her visual perception is so slovenly that at present it is almost entirely useless to her as a means of recognising words. The fact that during the past three years she had only attained a reading age level of 5·5 was an indication that some sort of simple, single unit

approach was required to assist her to learn to read; hence a thorough-going phonic method was employed with a minimum of irregular or "look and say" words introduced into the material. Under this plan she made excellent progress, and had within six months improved not only in auditory analysis but also in visual perception of words.

In the diagnostic programme suggestive information was also derived from the errors made in spelling lists.[1]

[1] F. J. Schonell, *Essentials in Teaching and Testing Spelling*, pp. 28-30, 3rd edition (Macmillan, 1932).

CHAPTER IX

CAUSES AND SYMPTOMS OF DISABILITY IN READING

We have shown in previous chapters that learning to read is a process demanding ability to make associations between visible symbols and auditory sounds, together with a high degree of perceptual ability to make integrated responses both visual and auditory in respect of the analysis and synthesis of word forms. In addition, it demands emotional attitudes and environmental experiences of the right kind. Hence, consideration of the causative factors in reading disability should include information on maturation, particularly in regard to visual and auditory perception, on physiological powers in regard to vision, hearing, speech and motor control, on temperamental traits and emotional attitudes, and on such influences as methods of teaching, continuity of schooling, and home standards.

It is obvious, therefore, that we should not uncritically accept any one characteristic of a backward reader as a cause of his condition, since this might prevent the discovery of the most effective remedial programme. Satisfaction, for example, with the recording of the fact that a backward reader was weak in ability to perceive fine differences in visual patterns of words might exclude the endeavour to rectify a disability due to an uncorrected defect of eyesight. Some of the attempts to drive behind symptoms in reading disability have undoubtedly led, in recent years, to considerable improvement in the treatment of backward readers. In this respect mention should be made of investigations dealing with handedness and eyedness. On the other hand, it is dangerous to allow physiological nterpretations to predominate in the field of educational disabilities. Much harm has been done to remedying backwardness in reading by such cerebral theories as

"word blindness" and "word deafness." The idea that the backward reader must, in some way, be cerebrally defective, has too long influenced educators' conceptions.

It should be remembered that illness—and disability in reading may be regarded as a mental illness, not always intellectual, but often emotional—is cured through a consideration of the symptoms revealed by the patient. To undervaluate the study of symptoms and to insist that studies should always expose causes is to detract from the final diagnosis of the condition.

In investigating scholastic disabilities, knowledge of mental causes and symptoms is often more useful than knowledge of physical causes and symptoms. To know that the mental defective (in the narrower sense of the term) is one whose perception of relationships and application of relationships to new situations is weak, is more valuable than a contemplation of his deficiency in physiological terms—a conception that has as yet yielded extremely little of practical value. Knowing the nature of the mentally defective's cognitive weakness, we can circumvent to some extent the effect of his intellectual impoverishment in the educational realm by introducing additional teaching devices and by emphasising memory, imitation and repetition.

Similarly with reading deficiency, a schedule of basic weaknesses is more helpful than interpretations in terms of cerebral insufficiencies, which are at best often unsubstantiated hypotheses.

1. Weakness in Perception of Visual Patterns of Words

(a) *In Discrimination*

Although weakness in discriminating between visual patterns of words, particularly those of similar structure, is one of the commonest characteristics of backward readers —it was shown by no less than 44 per cent. of boys and 40 per cent. of girls of the group—one can hardly describe

it as a causal factor. It is a resultant from some physiological immaturity or defection, or from mental immaturity. In differentiating backward readers from one another, in this respect, the criterion used was one of visual perceptual efficiency with patterns of words. The backward readers could not react accurately to the whole pattern of a word ; they confused the minor structural differences that existed between words like " wet " and " went," " he " and " she," " form " and " from," " matched " and " marched," " all " and " old," and were likely to replace one by the other in reading. In many instances they would take parts of the word and then try to guess the whole word. Thus " fr " would attract them, and " farm," " front," " for," " from," " form " would all be read as " for " or " from." They reacted to particular letters or groups of letters in words rather than to their configuration plus these particular letters.

A careful examination of their reading mistakes does not reveal any outstanding characteristic error.[1] They tend to omit, substitute, add or transpose letters in their confusion of known words with those unknown (but which they believe they recognise).

Evidence of their inaccuracy in perception is found in tests where they accepted as similar, pairs of words such as " arny, army ; bekind, behind." But they make better scores in tests of an auditory nature, such as recognition of phonic units (including common vowel and consonantal digraphs) and in ability to analyse and blend words phonetically. Often they read very simple passages correctly, provided they proceeded with a laborious letter-by-letter analysis : they sounded the words and recognised them so long as they remained regular, but with irregular words they failed hopelessly.

The visual perceptual deficiencies of a few of this group

[1] I mention this because some investigators believe that they have distinguished characteristic errors—certainly there is a greater number of omissions, but some of these readers are just as likely to add or substitute as to omit. It is the complete profile of errors from different causal factors that needs consideration with each backward reader.

were due to uncorrected visual defects, while there were several in whom past habits set up during a visual defect, now corrected, continued to be of contributory importance. But many, while revealing neither an apparent lack of visual acuity nor pronounced weakness in auditory analysis and synthesis, were yet defective in ability to perceive differences in patterns of words. To what could their weakness be ascribed ?

Theories of Reading Disability

Various theories have been advanced to account for this deficiency, some favouring an inherited or congenital basis, others explaining it in terms of acquired attitudes. One of the earliest of the former type was Hinshelwood's description of " congenital word blindness." [1] He believed that in backward readers there was defective cerebral development in localised areas connected with perception of words. For severe cases he suggested the term, " congenital word blindness," and for mild cases, " congenital alexia." Later, Pick postulated a theory of delayed cerebral development. Recent research does not, however, provide evidence of such localised cerebral functioning for higher mental processes.[2] Lashley's [3] experiments show that the brain tends, with regard to intellectual powers, to function as a unit, and that it is the organisation of functions rather than the functions of a particular area that is upset by lesions, shocks and toxins. He says that a complex organisation such as ability to read may be upset by a cortical disturbance, but that it is a discriminatory weakness with

[1] J. Hinshelwood, *Congenital Word Blindness* (H. K. Lewis & Co., London, 1917).

[2] See Burt's review of the evidence against so-called centres (pp. 326-333, *The Backward Child*) in discussing the problem of the relation of stammering and left-handedness. He examines in detail the popular idea that interference with, or changing the left-hander, may produce stammering, a misconception which arises from knowledge of the proximity of handedness and speech centres in the brain.

[3] K. S. Lashley, *Brain Mechanisms and Intelligence* (University of Chicago Press, 1929). " Basic Neural Mechanisms in Behaviour," *Psychological Review*, vol. xxxvii, January 1930.

regard to the arrangements of the letters of the words rather than a partial amnesia for words. This is borne out in practice by some cases that I have encountered of cortical lesions who experienced difficulty in learning to read.

In general, neither histological studies nor remedial work with backward readers tend to support an inborn cerebral deficiency theory of backwardness in reading. On the other hand, an explanation of reading disability in terms of visual deficiency or of delayed maturation of a mental power may, when we compare backward readers with normal readers, have some foundation. Frank[1] suggests that immaturity of perception is the cause of the disability in reading, for, in comparing the errors made by backward readers of 7 to 11½, she finds marked similarity with those made by younger children of 5 to 7 who are just learning to read. Both in reading and in spelling, the confusion of words of similar structure and the confusion of letters of similar structure indicate that the older backward reader is still at the perceptual level of the younger beginner whose tendency is to perceive in wholes of structural solidity without necessarily having the analytic power to discriminate between the finer intrinsic differences of similarly constructed wholes. This and supplementary evidence on the younger child's perceptual methods in general indicates delayed perceptual development in the backward reader.

(*b*) *Weakness in Perceiving the Orientation and Letter Sequence of Words*

Related to the backward reader's inability to discriminate between the visual patterns of words is the weakness of some pupils in perceiving the orientation and letter sequence of words. This is shown in the tendency to reverse small words, to confuse letters which differ only in left to right

[1] H. Frank, "A Comparative Study of Children who are Backward in Reading and Beginners in the Infant School," *British Journal of Educational Psychology*, vol. v, part 1, February 1935.

position of particular parts, and to transpose letters and syllables in reading words. The weakness is connected with the pupil's inability to make a consistently correct perceptual attack on words. Instead of proceeding systematically from left to right with every word, he exhibits a form of right-to-left perception. Sometimes he commences in the middle of the word and works to either the left or the right according to the familiarity of the remaining groups of letters. At other times he works from the extreme left of the word to the right; thus the characteristic errors of backward readers displaying this perceptual weakness are:

(1) confusion of "b, d," "p, q";
(2) reversals of words such as "was, saw"; "on, no"; "it, ti"; "rag, gar";
(3) transposition of letters such as "gril (girl)"; "theer (three)"; "ram (arm)."

Relationship of Certain Perceptual Errors to Handedness

Relying largely upon the evidence offered by confusion of "b, d," reversals of words and transposition of letters, some writers have been tempted to relate reading disabilities to left-handedness. Thus Dearborn, presenting data concerning backward readers, stated that one-third of the twenty-five cases were left-handers, and cited reversals of words, confusion and transposition of letters as "commonly observed errors."

Recent research does not substantiate any vital connection between left-handedness as such and reading disability. Thus Moody and Phillips,[1] using five different reversal tests, compared 136 pairs of right- and left-handed pupils, matched according to sex, chronological age, mental ability, reading ability and grade placement, and concluded that in this battery of tests involving reading or activities closely related to the mental reaction in the act of reading, handed-

[1] C. Moody and A. J. Phillips, "The Effects of Handedness on Reversals in Reading," *Journal of Educational Research*, pp. 651-660, May 1934.

ness *per se*, with the two groups under consideration, had little or no influence on the type of reading responses made.

Left-handed pupils reacted to the various reading situations just as right-handed pupils did. The investigators note that, as far as possible, only pure right-handers and pure left-handers took part in the experiment, and that different results might have been obtained from cases where neither right- nor left-handedness was dominant.

It is on this basis of mixed handedness and eyedness that Orton [1] formulated his theory of reading disability when he suggested that it was due to failure to train the brain to work exclusively from the leading or dominant hemisphere. He says that there are three different levels of cerebral functioning with regard to the perception and understanding of words. The first level relates to the ability to perceive visual stimuli and to register those perceptions. The second relates to the recognition of objects and is bilateral, like the first. These lower centres, as he calls them, are similar areas of the two hemispheres apparently functioning together as a unit (for destruction of both areas is necessary for cortical blindness). At the third level, the visual associative, the visual element is linked with data from other sensory fields (sound and movement) and only one hemisphere is operative. It is by means of the associative tracts in this area that words are understood.

He suggests that engrams are formed in the associative tracts of both hemispheres, but that they are latent, or elided, from one hemisphere (the non-dominant). The establishment of dominance of the hemisphere for speech and writing, according to Orton, occurs in early childhood, "but apparently at varying ages, and expresses itself outwardly in a preference for the right or left hand as the case may be."

[1] First formulated after a study of fifteen cases of reading disability. S. T. Orton, "Word Blindness in School Children," *Arch. of Neur. and Psychiatry*, 1925, vol. xiv, pp. 581-615. Genetic Psychology Monographs, vol. vi, Nos. 4 and 5, 1928 (pp. 335-339). Foreword to *Methods for Diagnosis and Treatment of Cases of Reading Disability*, by Marion Monroe. S. T. Orton, "The Sight Reading Method of Teaching Reading as a Source of Reading Disability," *Journal of Educational Psychology*, February 1929.

If clear-cut dominance is not established, says Orton, engrams from one hemisphere might interfere with the linkage between "the sensory stimulus (the printed word) and its meaning, and hence there might be difficulty in recognising letters and words in their correct orientation."[1] Evidence of this lack of dominance, argues Orton, is to be found in the backward reader's confusion of letters of the same form ("b, d," "p, q"), the tendency to read from right to left instead of from left to right, and the facility which some of the backward readers showed in mirror reading and mirror writing.

Evidence from the Present Investigation

Evidence in favour of Orton's theory is supposed to be the confusion of similar letters and reversals or part reversals of words shown by backward readers. We may well ask from the outset, "What is the extent of these types of errors amongst all backward readers and amongst normal readers at different ages?" and "What is the significance of the error in the total reading disability of the pupils?"

On these points information was gathered from a group of 104 backward readers between the ages of 7+ and 13+, and from 104 normal pupils of similar ages. The control group included a few pupils of 7+ in the infant classes and the entire sample contained a correct proportion, namely 10 per cent., of dull pupils. Tests of oral reading (words and prose), of spelling (words and prose), and of composition were given to both groups. Any confusion of "b, d," "p, q," "w, m" was noted, while transposition of letters within words, both in reading and writing, were accepted as indications of this perceptual weakness. No attempt was made to relate

[1] Creak interprets this part of Orton's theory in this way: "He suggests that visual memory patterns or engrams are formed in both hemispheres, those in the dominant hemisphere being the ordinary right-handed form of the written word, and those in the so-called silent hemisphere being the mirror image, thus CAT and TAC, and that the brain learns to suppress the mirror image" (Mildred Creak, M.D., "Reading Difficulties in Children," p. 146. *Archives of Diseases in Childhood*, June 1936.)

the distribution of the errors to handedness and eyedness; there were various combinations of handedness and eyedness in both groups. We were simply concerned at this stage with the incidence of the errors at various age levels amongst backward and normal pupils. The figures obtained are given in Table XII.

TABLE XII

Percentages of Backward Readers and Normal Pupils showing Confusion and Transposition of Letters and Reversals of Words in Reading and Writing

Age.	No.	Reading.				Reading and/or Writing.				Writing.			
		Confusion of letters b, d ; p, q ; w, m.				Transposition of letters and reversals of words.				Confusion of letters b, d ; p, q ; w, m; m, n.			
		Backward Readers.		Controls.		Backward Readers.		Controls.		Backward Readers.		Controls.	
		B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.
7+	15	85	100	30	25	85	100	35	27	60	100	15	10
8+	14	60	60	15	10	80	60	21	18	60	80	8	6
9+	21	62	60	5	5	82	60	15	16	82	72	...	...
10+	19	30	25	...	...	60	50	12	12	50	75	...	...
11+	17	14	...	...	...	45	30	5	5	30	6	...	...
12+	8	15	...	...	...	32	...	...	...	18	...	...	...
13+	10	...	...	...	...	22	...	...	...	20	...	...	...

It will be observed that in spite of the smallness of the samples, there is significant evidence that in all age groups there are many more backward readers than normal pupils who are subject to these perceptual errors.[1] It can

[1] These figures should be of vital interest to all teachers, for one of the most frequent questions asked of the educational psychologist by teachers concerns pupils who confuse "b, d," "p, q"; and/or who reverse short words. It should be remembered that most young children between the ages of 5+ and 7+ have difficulty (decreasing with age) in remembering the correct orientation of patterns and parts of patterns (letters, words or figures). It is because the thing perceived has for them structural solidity and they tend to neglect its spatial setting. As the patterns partake of full meaning through usage and experience, and as the pupils mature mentally, so the tendency to use or view patterns in reversed or even inverted position tends to disappear. With pupils up to the age of 7, teachers should not be perturbed over reversed 7's or 3's, or confused b's and d's. After that age the error indicates a perceptual weakness which may be due either to an organic visual deficiency or to a purely mental weakness in this specific realm of printed symbols.

also be inferred from the figures that, amongst backward readers after the age of 9+, these types of error decrease fairly rapidly with increase in age, but prior to that age the error is widespread.

In this respect it should be noted that the figures do not take into consideration the amount of error made by the backward readers compared with normal readers, but an examination of the records kept during the experiment shows a much greater number of errors amongst the backward readers. Some of the normal pupils included in the results made only one or two transpositions while a few made only a single reversal, but the fact that they still showed this weakness in their perception of words was sufficient evidence to include them in the lists irrespective of extent of errors.

A third point, evident from the figures of Table III, is that there are some backward readers (including seven-year-olds) who are entirely free both in reading and writing, from confusion of "b, d"; "p, q"; etc., or transposition of letters or from reversal of short words. This seems to indicate that even if Orton's theory were sound physiologically it must only apply to certain backward readers.

In determining the importance of such errors in the total pattern, the nature of the reading material must be kept in mind, for the number of confusions, transpositions and reversals is much dependent upon the material. The single unit—the letter or the syllable—is most confused; thus "saw" is more likely to be confused than "sawing," "up" and "on," than "upon," so that if the reading material is of the old phonetic or semiphonetic kind, loaded with a plentiful sprinkling of forms such as "bad," "dad," "day," "pig," "on," "pot," "top," "was," "saw," "of," "for," "up," then such errors are likely to be more widespread and to continue longer. Where these short reversible words are not introduced too frequently into the reading matter, and where they are attached in context to longer contrasting word patterns, the backward reader does not find such difficulty in discrimination.

Finally, the figures of the table are significant in that the errors of reversal are much less frequent in writing than in reading. The child who reverses words in reading does not necessarily do so in writing, a fact which demonstrates the value of the manual cue and the kinæsthetic impression in learning words.

We may conclude that with ordinary reading material suited to the child's age, the transposition and reversal type of error is much commoner amongst backward readers than amongst normal pupils, that it indicates the nature of their inaccurate visual perception and suggests lines along which they can be helped, but that viewed against total reading deficiency this type of error does not, for most pupils, assume a rôle of great importance. Although there is a relationship between transposition, confusion of certain letters and reversals made, and reading success, this is by no means absolute; some of the worst readers made no such errors, while some quite good readers made errors of this type.[1] There are only a few cases amongst the backward readers for whom the error is intense and extensive and for whom it represents a definite diagnostic symptom of their faulty perception.

2. Combinations of Handedness and Eyedness

In this part of the study backward readers were tested for handedness and eyedness. Tests of writing, throwing, winding, cutting, hammering, sorting and stirring were used to determine present hand preference, while home and school history schedules revealed changes of preference of hand in writing. Left-handedness was taken to mean the hand most often preferred in the operations listed above. In sighting, the pupils had to sight an object through a hole in a piece of cardboard. A supplementary test consisted of "measuring the length" of a box by aligning

[1] For supplementary evidence, see H. Hildreth, "Reversals in Reading and Writing," *Journal of Educational Psychology*, vol. xxv, no. 1, January 1934.

it with a pencil held in the hand. Reliable evidence was obtained from only 73 cases.

The results are given in Table XIII.

TABLE XIII

Hand and Eye Relationships amongst 73 Backward Readers and a Control Group of 75 Normal Pupils. (In Percentages.)

Relationship.	Backward Readers (73).	Normal Pupils (75).	Creak Cases (50).	Monroe Cases (215).
(i) R.H. and R.E. .	43	60	24	47
(ii) R.H. and L.E. .	40	25	18	35
(iii) L.H. and L.E. .	5	4	12	8
(iv) L.H. and R.E. .	8	3	12	3
(v) R.H. and either eye .	3	8	6	6
(vi) L.H. and either eye .	1	0	2	1

The figures derived from 73 cases are compared with those of Creak [1] and Monroe.[2] Creak's somewhat different distribution may be accounted for by the fact that the I.Q.'s of her 50 backward readers were: I.Q. 70-90, 66 per cent.; I.Q. 90 and over, 34 per cent.; and, generally speaking, the lower down the intellectual scale the more left-handedness and dextro-sinistrality do we find.[3] Monroe's figures relate only to writing with the left or right hand

[1] M. Creak, "Reading Difficulties in Children," *Archives of Diseases in Childhood*, June 1936, p. 151. It will be noted that Creak's distribution is incomplete by 26 per cent. Creak gives, in her table, three other categories of backward readers, namely, ambi H. and R.E. (16 per cent.); ambi H. and L.E. (8 per cent.); and ambi H. and ambi E. (2 per cent.). The presence of these may be due to the uniqueness of sampling, but I was unable to find any pupil in my group of backward readers whom I could really catalogue as ambidextrous. A year after I had completed my investigation, I found this confirmation in Burt's work, "This confirms my conclusion that ambidexterity is extremely rare and suggests that, as soon as the child begins to form manual habits, a genuine ambidexterity becomes almost non-existent" (*The Backward Child*, p. 282). On the other hand, the fact that Creak's findings of handedness and eyedness for each pupil were independently checked, demonstrates the extreme complexity of the problem of handedness and eyedness.

[2] M. Monroe, *Children Who Cannot Read*, p. 85 (University of Chicago Press).

[3] By far the most comprehensive and psychologically sound consideration of the problem of handedness is Burt's masterly analysis in *The Backward Child*, chap. x, "Left-handedness," pp. 270-359.

and her 215 backward readers divided into approximately 51 per cent. of I.Q. 90 and over; 49 per cent. under I.Q. 90. The 73 backward readers referred to in this study were distributed as follows: I.Q. 90 and over, 67 per cent.; I.Q. below 90, 33 per cent.

An examination of the observed differences between backward readers and normal pupils showed that there were more left-handed and right-eyed—a small group of six pupils—and more right-handed and left-eyed—a larger group—amongst the backward readers. These differences were statistically significant.[1] This seems to indicate that amongst backward readers there are two groups whose disability in reading may, in part, be caused by the particular combination of handedness and eyedness they display.[2]

The question arose, "How do such combinations of writing and sighting preferences influence ability in reading, and what is the qualitative nature of the handicaps they occasion?" An answer to the first question must, to some extent, be speculative, for the exact relationship of these factors, inherited and acquired, in handedness and eyedness has not yet been determined. Ocular preference may be established by hand preference, or, conversely, hand preference may follow eye preference. On the other hand, eye preference may be due to differential visual acuity.

It has been previously stated that the young child's perception of certain word and letter forms is frequently inaccurate, but with an increase in maturity and experience this form of perceptual power increases. It is conceivable, therefore, that children whose hand movements and eye

[1] Using $\sigma\,(p_1-p_2) = \sqrt{pq}\left(\frac{1}{n_1}+\frac{1}{n_2}\right)$ where p_1 and p_2 are the proportions found in the samples n_1 and n_2 of the characteristic under consideration, $p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2}$ and $q = 1 - p$, and applying the usual criterion.

[2] See also *Ocular Dominance in relation to Developmental Aphasia*, M. Macmeeken (University of London Press, 1939), where significant differences for her left-eyed backward readers are reported (34 cases only).

movements [1] do not consistently fuse to give an augmented impression of word patterns in a right-left setting, may lag somewhat behind other children in ability to recognise and recall word forms. The child whose manual and ocular habits influence him in regarding some words from a right-to-left or a middle-to-left direction might experience difficulty in reading and might require assistance in stabilising a consistent left-to-right perceptual attack on words. Certainly some of the worst cases of backward readers found during the investigation were left-handers who showed pronounced right-left or middle-left perception of words, and whose manual movements were of a right-left kind.

But to complete the examination of the ocular manual theory of reading disability there is a further point to be considered, namely, that the backwardness of no less than 72 per cent. of the mixed dextrals and mixed sinistrals is also associated with important emotional attitudes, with emotional instability and/or with certain auditory perceptual weaknesses. In some cases it would seem that the emotional instability and the weakness in auditory discrimination [2] have in themselves been intense enough to cause backwardness. In other instances the present poor attainments in reading appear to be more intimately connected with emotional attitudes of resentment, inferiority and apathy than with the inaccurate perceptual attack, although, in the initial stages, this may have started the emotional condition.

In addition to the emotional factors often present, my own results show that amongst the mixed dextrals any inconsistency of visual perception exacts its full influence where there is an accompanying weakness in auditory

[1] Both of which are important in perception, for manual movement assists in establishing correct perception through kinæsthetic impressions, and ocular movements are involved in recording spatial setting and organisation of the percept.

[2] For a further consideration of the influence of weakness in auditory discrimination on verbal attainments, see F. J. Schonell, "The Relation between Defective Speech and Disability in Spelling," *British Journal of Educational Psychology*, vol. iv, part 2, June 1934.

discrimination—a more intense handicap. Where auditory powers are normal the acquired phonic ability acts as an aid for words partially recognised and as a check upon words improperly pronounced on the first attempt. In some instances it would seem that although the pupil is right-handed and left-eyed, the difficulty in auditory discrimination of sound is greater than that of the ineffective visual attack.

Case Study

Illustrative of the backward reader who was left-handed and right-eyed and who showed an inaccurate technique in his visual perception of words was Leslie E., aged 12. Here, too, the backward condition was accentuated by emotional factors and by a certain weakness in auditory perception. The emotional inhibitions seemed to have developed around a mental deficiency examination which the boy was given when aged 9 years. The report of the School Medical Officer shows that Leslie was not certified as mentally defective, but the headmistress of the Junior School, the boy's parents, his class-mates and even he himself thought that he had been thus classified. The class teacher of the Senior School reports of Leslie that " he was in the habit of expecting to be treated differently from others and to be waited upon when he entered the school. He explained to his teacher that he had had a certificate (meaning that he had been certified M.D.) for three years."

On a verbal group test he obtained a mental age of $7\frac{2}{12}$ years (but being a non-reader the result is obviously of little value); on two performance tests, namely, the cube construction and the form-board, he obtained mental ages of $8\frac{1}{2}$ and 10 years respectively. In arithmetic tests he reached a mental age of 9 years, but in reading and spelling his attainments showed a level of little better than a $5\frac{1}{2}$-year-old. In written composition his efforts were equally poor, yet in oral composition, and oral lessons, he expressed himself adequately and fluently, showing at the same time a good memory of events.

Tests showed that he performed almost every activity left-handed, but sighted with the right eye. In writing he moved his pen in a clockwise direction to make such letters as "o," "a" and the round parts of letters like "d," "g." In addition to showing the paucity of his effort the following composition sample reveals the nature of his errors :

I live in the valsi of Wigfilid whch is boau two mot come To cah day I came to school no my bayck. Wowe ti nairs I war my mone lare and retcow. I bo not go mohe to bina won the is boig, dut mane eaer whre a bae vife nren cderne.

" I live in the village of Wingfield which is about two miles from Trowbridge. Each day I come to school on my bicycle. When it rains I wear my new leggings and raincoat. I do not go home to dinner when the (weather) is bad, but remain here with about fifty other children."

The weakness of his auditory powers can be gauged from spelling mistakes, for many of them are not even passable phonetic analogies. Even more interesting is the number of reversals and partial reversals in spelling, thus :

valsi—village	come—from	ti—it
boau—about	no—on	mone—new
bo—do	bina—dinner	vife—fifty
mohe—home	eaer—here	cderne—children

Most of these errors show that he tends to recall the patterns of many words in a reversed, or partially reversed form, distorted at times by poor auditory analysis and synthesis.

This reversal tendency, apparent in his writing, is pronounced in his reading, and at once suggests that it has played an important part in his reading disability. His visual perceptual attack on words is made, in the case of many small words, from right to left, and results in a complete, or almost complete reversal, for example," on—no," " war —saw," " of—for," " sad—has," " end—den," " rag—gar."

With larger words, he starts not infrequently in the middle and then proceeds to the left, but occasionally he will vary the procedure by commencing in the middle of the word then going to the end letter or to the initial letters. Whatever the combination decided upon, his final effort bears definite evidence of most uncertain perceptual methods dominated by a right-to-left attack. Samples of his reading mistakes are as follows :

" under "	read as	" duner "
" after "	,,	" fater "
" recovered "	,,	" oreved "
" ramble "	,,	" bamdle "
" playing "	,,	" yaling "

An injunction to sound the words does not appreciably decrease the reversal tendency, for he will give each letter its phonic sound and then proceed to apply the same inaccurate visual perceptual attack to the word. Naturally, his poor auditory powers have precluded his building up a phonic background, so that few common consonantal and vowel digraphs are recognised as a single sound ; pairs such as " ch," " tr," " ae " are always sounded as two separate letters.

In cases such as this it would seem that the ocular-manual preference theory applies, and without doubt some of the reading progress made by the boy was due to a recognition of this fact and to the adoption of writing and tracing aids which provided manual cues for a recognition of words from left to right. Nevertheless, progress would have been exceedingly slow if the other disability factors—lack of auditory discrimination and emotional inhibitions—had not been dealt with by a methodical course in phonic analysis and by constant encouragement and a broad programme for re-establishing the child's confidence in his own intellectual powers.

In conclusion, the explanation of the perceptual inaccuracy of backward readers in terms of ocular and manual inconsistency seems to have some practical

confirmation in the nature of the reversals and part-reversals made by some right-handed, left-eyed (mixed dextrals) and left-handed, right-eyed (mixed sinistrals) pupils such as Leslie E. But it has to be remembered that *there are many mixed dextrals and mixed sinistrals who are excellent readers both in speed and accuracy, that the confusion and transposition of letters and reversal tendencies are more prevalent amongst all backward readers than amongst normal ones, that such errors are not a prerogative of the left-hander or the mixed dextral, and that for many backward readers they are not errors of importance.*

A detailed examination of all mixed dextrals and sinistrals amongst my reading disability cases has convinced me that the manual-ocular theory of their disability is an over-simplification of the problem,[1] for usually there are other factors entering into the reading disability. In so far, however, as it explains some of the difficulty of a few backward readers and in so far as it focusses attention upon certain forms of perceptual difficulties and emphasises the value of kinæsthetic impressions in teaching backward readers, it has considerable educational value.

3. Defects of Visual Acuity

Both as a primary and as a precipitating factor, defects of eyesight are a cause of backward reading. Until a child's defective vision is discovered and remedied he is experiencing only blurred visual images which result in his recording wrong impressions of words. His perceptual movements are decidedly slovenly and short, for the nervous strain imposed produces inability to concentrate upon visual forms of words, to take notice of peculiarities in their structure or of the relative order of their letters. More often than not the pupil takes a fleeting glance at the word and mistakes an "e" for an "i," an "m" for an "n"; or he reacts to some prominent part of the word and guesses it—thus seeing the "ch" in "catch" he calls it "church."

[1] See also Monroe's cases in *Children Who Cannot Read*, pp. 81-92.

In addition to the actual handicaps of defective vision, the pupil's learning attitude is influenced by emotional irritation. Blurred imagery ceases as soon as suitable glasses are provided, but the mental attitude formed during the disability often persists. This in turn is influenced by the nature of the defect and the period of its uncorrected continuance. A myopic or short-sighted scholar is easily detected by his attitude. Hypermetropia, or long sight, and astigmatism or unequal curvature of the lens—two defects more intimately connected with reading disability—are not always so readily discovered. Strabismus or squint, which results from a weakness of the muscles controlling the movements of the eyeball, is often less susceptible to immediate adjustment than other defects, because of the influence upon the complaint of malnutrition and general nervous conditions.

Amongst 110 backward readers examined in the present research the following percentages of visual defects were found as compared with a similar group of normal readers.

TABLE XIV

Percentages of Visual Defects amongst Backward and Normal Readers

Defect.	Backward Readers.			Normal Readers.		
	Boys.	Girls.	Average.	Boys.	Girls.	Average.
Myopia, Astigmatism Hypermetropia—						
(*a*) Slight .	6·0	8·0	7·0	6·0	7·0	6·5
(*b*) Marked .	11·0	19·0	15·0	8·0	10·0	9·0
Squint . . .	5·0	3·0	4·0	...	0·4	0·2
Totals . .	22·0	30·0	26·0	14·0	17·4	15·7

The figures[1] suggest that, while visual defects are significant causal factors in reading disability, they are

[1] These figures show between backward and normal readers for all defects a difference of 10 per cent., considerably more than Monroe found (*op. cit.*, p. 80), but about the same as Fendrick obtained.

not as frequent as one would be led to infer from a consideration of the fact that reading is primarily dependent upon visual perception. There are not a few normal readers who have defective eyesight, so that, from the standpoint of causation, visual defects need only handicap reading progress under specific conditions. Detailed examination shows that these special circumstances are related firstly to the intensity of the defect ; in Table XIV it will be noted that marked defect—particularly myopic astigmatism or hypermetropic astigmatism — is much more prevalent amongst the backward readers. Secondly, the age at which the defect shows itself has important bearing. Thirdly, the immediacy and efficiency with which the defect, once recognised, has been corrected is of vital significance. And lastly, the extent to which the defect is associated with other causal factors, especially emotional, influences its effect.

Thus, amongst the backward readers was a boy aged 10, I.Q. 95, reading age 7·0, spelling age 7·3, who was most despondent over his squint, which he felt was responsible for his poor verbal attainments. His vision was discovered to be :

Without glasses .	right eye 6/60 ;	left eye 6/12
With glasses .	,, 6/18 ;	,, 6/9

His right eye, which was badly twisted, had converged slightly more since his glasses had been given to him. He now experienced headaches whenever he looked at print for long and, although he tried to do extra work at home to overcome his backwardness, his efforts were ineffective. His attitude regarding his affliction and his reading retardation was almost pitiable, and the promise of assistance seemed to give him new life.

One boy aged $8\frac{7}{12}$, I.Q. 93, with acute astigmatism uncorrected, had a reading vocabulary of only sixteen words. His disability had been intensified by the effect of intermittent visits to the hospital for treatment for ulceration of the eyes. As ointment had been placed in the eyes he

was excused from school work for several weeks during hospital visits, so that for him discontinuity of instruction and that lazy mental attitude which often persists after frequent periods of inactivity were additional causal factors.

Another point deserving of mention with regard to these commoner errors of refraction is the irregularity with which glasses are worn by pupils from poor homes. In the first place, it is difficult to induce the parents to co-operate with the medical officer by providing their children with glasses ; usually some school benefactor, perhaps a member of the Care Committee, buys them their first pair. But in a house where the motto " Order is half labour " finds no place, these so easily acquired spectacles are just as easily broken, lost or mislaid. One girl had had no fewer than five new sets of lenses in the past two years, each breakage being accompanied by a relatively long period when the child was without glasses. Another backward reader of eight and a half wore his glasses only during school hours though they were intended for constant wear ; his mother had asked the class teacher whether he could leave the glasses in school at the close of each day, as at home the baby pulled them off his face or his younger brother knocked them off the table. In six disability cases followed up for one year the correction of uncorrected defects or the constant wearing of glasses already provided made a considerable difference in their reading attainments.

In addition to the visual defects mentioned above, some investigators have indicated that reading disabilities may arise from less common visual deficiencies. Thus Betts,[1] in stressing the physiological maturation factors in backward reading, has made use of an instrument termed an ophthalmic telebinocular for measuring, in addition to common defects, visual acuity (binocular and monocular), far point fusion or ability to combine images from the two eyes, near point (reading distance) fusion, vertical and lateral imbalance.

[1] A. E. Betts, " A Physiological Approach to the Analysis of Reading Disabilities," *Educational Research Bulletin*, vol. xiii, nos. 6 and 7, 1934. (Ohio State University.)

Selzer [1] went so far as to say that eye-muscle imbalance, alternating of vision (suspenopsia) and lack of fusion "account for such reading disability as is not accounted for by general mental disability." Crider,[2] in showing that eye-muscle imbalance is related to visual fusion, alternating vision and ocular dominance, believes that they may all be related to a common phenomenon (hemispherical dominance is suggested) which has a bearing on reading disability. Fendrick,[3] using Bett's visual tests, examined groups of normal and backward readers, but only obtained statistically significant differences for binocular acuity, astigmatism, left and right acuity. It would seem that, while there may be visual defects, in addition to those we know, connected with reading retardation, further research is required to indicate the exact significance of these. On the other hand, although fitting the backward reader with lenses appropriate to his visual defect does not cure his backward condition, yet it makes a considerable contribution which has not only its physiological but also its psychological values. Studies of the backward readers, examined during the course of the research, reveal most strikingly that all backward readers should have, early in their difficulties, a very thorough examination of their eyesight.

4. Weakness in Auditory Discrimination of Speech Sounds

Weakness in auditory discrimination of speech sounds is one of the most important and most frequently occurring causal factors in reading disability. It represents a lowered power of discrimination of word sounds and manifests itself in an inability to remember speech sounds, to discriminate between speech sounds somewhat similar in

[1] C. A. Selzer, *Lateral Dominance and Visual Fusion*, Harvard University Monograph. (Harvard University Press, 1933.)

[2] B. Crider, "Certain Visual Functions in relation to Reading Disabilities," *The Elementary School Journal*, vol. xxxv, no. 4, December 1934.

[3] P. Fendrick, *Visual Characteristics of Poor Readers*. Teachers' College Columbia Contributions to Education, No. 656 (Bureau of Publications, Teachers' College, Columbia University, New York, 1935).

kind and to analyse and synthesise correctly the auditory elements of words. It would appear to be the handicapping factor in children who are slow and inaccurate in associating audible sounds with their visual symbols. It is a mental and not an organic deficiency. The partially deaf, that is pupils whose general auditory acuity is weak, make immediate progress in reading when their condition is discovered and appropriate methods applied. But with pupils whose deficiency in auditory discrimination is not due to organic defects their reading only yields to continuous and careful training in comparing and contrasting speech sound values in a scientifically ordered manner, supplemented of course as much as possible by other means of ingress, namely, extra emphasis on the visual and kinæsthetic impression of words. The condition seems to be a form of delayed auditory maturity in a particular aspect of language. Just as there are some weak readers, whose visual perceptual powers show immaturity in differentiating patterns of words, both in form and in orientation, so there are children who fail to register correctly the auditory impression of words not only in sound values but also in temporal distribution of sounds in a word. The *visually weak reader* continues to confuse, longer than the normal child, such letters as " b," " d," to reverse small words, to confuse patterns such as " pitch," " fetch," " from," " form," and to transpose letters, " brunt (burnt)," " siad (said) " ; the *auditorily weak reader* continues to confuse words such as " set," " sat " ; " but," " bud " ; to make errors in differentiation of " m," " n " ; " f," " th " ; to fail in remembering the sounds of common digraphs such as " ch," " sh," " oa," " ow," and to fail in attaining proficiency in blending separate sounds to make a word. As practice and experience increases, and as intelligence matures, this special weakness of auditory perception for speech sounds seems to decrease. During the immaturity period such children require much more help than normal pupils. Monroe[1] suggests that " lack of

[1] M. Monroe, *Children Who Cannot Read*, p. 95.

auditory discrimination of words may be a special defect in hearing just as color-blindness is a special defect in vision. A person may be color-blind and yet pass the visual acuity tests for forms. In a similar manner a person may have weaknesses with regard to certain auditory qualities and yet pass the normal hearing tests for sound intensities. Had reading been dependent upon color instead of form (*e.g.* if the word 'cat' instead of being composed of letters were composed of spots of red, green, yellow) then color-blind persons would also be word-blind or at least would have confusions among the words most affected by their particular color weakness. So in audition the lack of discrimination of certain sounds may lead to a confusion of words, which in turn affects speech or reading, or both." This would suggest that the weakness is an inborn one and that it is always present. If the child no longer shows it in his reading attainments then it is mainly due to the fact that its effect has been minimised by constant practice with words and their sounds. To some extent this interpretation is borne out by actual case histories, for not a few of my older cases who were backward in reading and spelling, and who have made excellent progress in reading, still remain backward in spelling. Furthermore, I have in my files cases of adults who when writing at speed still confuse "m" and "n," "p" and "b," or who consistently make vowel substitutions, *e.g.* "alphebet," "necissary," "perpose," while many of this group of auditorily weak verbalists have indicated difficulties in auditory discrimination when learning foreign languages.[1]

Weakness in auditory discrimination may vary in intensity from an uncertainty between pairs of letters auditorily alike resulting in a minor amount of reading retardation, to cases where the inability to discriminate auditory values is so pronounced that both reading and speech are on an

[1] F. J. Schonell, "Ability and Disability in Spelling amongst Educated Adults," *British Journal of Educational Psychology*, vol. vi, part ii, June 1936. Note in particular the case of M. M., p. 139.

extremely low level. In its most extreme forms it has been studied in detail by Fildes,[1] the Ewings[2] and Sheridan.[3] Some of Fildes' cases were almost deaf to speech and unable to converse, while reading attainments were nil ; in fact, their state so much resembled mental deficiency that several of them had been committed to special schools for the mentally defective. Of their verbal powers the investigator says, " comprehension of spoken language is for all practical purposes negligible, for in their cases the speech was quite incomprehensible."

Amongst my group of backward readers there were all degrees of deficiency in auditory discrimination. Of the total, 38 per cent. showed some form of the weakness ; these varied from five extreme cases of non-readers with gross speech defects to older pupils whose weakness had almost disappeared. The exact nature of the handicap and of its decrease with time and practice is demonstrated in the unique case of three backward readers in the same family—Albert B. and Sidney B., aged $8\frac{2}{12}$ and $9\frac{5}{12}$ respectively, and their sister Hilda B., aged $11\frac{3}{12}$. Their I.Q.'s and verbal attainments are tabulated below :

	C.A.	I.Q.	Reading attainments. Words.	Reading attainments. Prose.	Spelling.	Composition.
Albert B.	$8\frac{2}{12}$	90	5.2	5.1	5.1	...
Sidney B.	$9\frac{5}{12}$	86	6.5	6.6	6.5	7.5
Hilda B.	$11\frac{3}{12}$	88	8.8	8.0	8.5	10.0

Albert, the youngest of the family, a normally intelligent child, had a pronounced speech defect which made his talk almost unintelligible. In addition to the weakness in auditory discrimination, which was at the basis of his poor speech and impoverished attainments in reading and spelling, there was a strong emotional inhibition which

[1] L. A. Fildes, " A Psychological Enquiry into the Nature of the Condition known as Congenital Word Blindness," Ph.D. Thesis in the University of London Library, 1926.

[2] A. M. Ewing, *Aphasia in Children* (Oxford University Press, 1930). *The Handicap of Deafness* (1938), *Opportunity and the Deaf Child* (1947), I. R. & A. W. Ewing (University of London Press).

[3] *The Child's Hearing for Speech*, Mary D. Sheridan (Methuen & Co., 1948).

greatly handicapped the boy in his endeavour to express his thoughts in words. So pronounced was his agitation during conversational contact with many adults, including some members of his own family, and with unfamiliar children, that attempts to speak were accompanied by physical tension and perspiration. His intermittent emotional state had resulted largely from unhealthy home influences—the mother maintained that the boy could speak properly if he tried, using as an argument the progress made by his brother and sister who had also shown speech defects. She said he was only lazy and " wanted it knocking out of him," which alleged remedy she sometimes applied, while the father still further confused and depressed the unfortunate boy by avowing that the speech defect had become much worse since Albert had been operated on for tonsil and adenoid conditions.

In reading and spelling his total vocabulary amounted to approximately twenty words. This, combined with his emotional inhibitions, prevented him from expressing himself in written language even in the crudest form.

Sidney, aged $9\frac{5}{12}$, had only a slight speech defect, and in reading and spelling had made progress to the level of 6·5 mental years. His reading was extremely slow and was characterised by numerous mistakes of an auditory kind. If one did not penalise him for very weak spelling his written composition was comparable with that of a mental level of 7·5. He could usually manage to write between fifty and sixty words on a subject in half-an-hour. Unlike his brother and sister, he was of a buoyant, optimistic nature—ready to talk or extemporise whenever the occasion presented itself.

Hilda, aged $11\frac{3}{12}$, was a diligent girl, who had shown pronounced backwardness in reading and spelling, and who was still very slow in reading. Her composition was relatively good, equivalent in quality to that of a ten-year-old. She had developed an intense interest in sewing and fancy work, in which occupations she was best in her class.

The exact nature of the verbal disabilities that characterise these pupils, and the progress made by the two elder ones, can be seen in the following samples of their errors in reading, spelling and written composition (the correct forms of the words or sentences are shown in brackets).

Albert B., $8\frac{2}{12}$ *years.* *Sidney B.*, $9\frac{5}{12}$ *years.* *Hilda*, $11\frac{3}{12}$ *years.*

Reading Errors

A non-reader ; does not know more than 20 words.

went (wet)
set (sad)
loaf (love)
waited (water)
bound (burnt)

touches (torches)
pin (pine)
stirched (stretched)
sheaves (shelves)
serous (serious)

Spelling Errors

ruru (run)
daod (bad)
caca (cap)
coc (got)
to-oby (to-day)
fim (fill)
oeoee (only)

runf (rough)
woon (would)
path (play)
holt (head)
tonta (turned)
moyanl (marble)

pulpish (publish)
cleadedness (cleanliness)
aaedete (accident)
pisnise (business)
plecant (pleasant)
sobben (sobbing)
[Note the interchange of voiced and unvoiced consonants.]

Composition

Albert.— Nil.

Sidney.—" A juntn man bon a bine toiyou and he hat a toiy lithe and she cyonnoth toiyou verey bay and one bay the man wthen to it and siad I will ciyou henes in the wonth and fith you while banet me . . ."

(A young man built a beautiful statue and he had a beautiful wife and she grew beautiful every day and one day the man went to it and said I will give everything in the world and if you will marry me . . .)

Hilda.—" At school *were* we learn there are many classes. I am in class six and I am getting a *prise* for sewing this year. . . . One day we had to *rite* a *coposition* on *pandor's woudful* box . . ."

The most interesting aspect of these samples is the clinical pictures they present. Albert, almost unintelligible in speech, a non-reader, shows by his spelling errors how difficult he has found it to link audible sound and visible symbol. Sidney has made some progress, so that his attempts are a little less remote from the accepted forms. Hilda, who speaks normally, simply shows in reading and spelling a certain confusion of similar word groups and of letters such as "p," "b," and "a," tending to omit a syllable in long words.

Naturally, the bulk of the reading disability cases whose backwardness was primarily attributable to weak power of auditory discrimination and auditory-visual association were not as backward as Albert and Sidney B., but their errors were similar in kind if not in degree. All cases, whether extreme or mild, revealed the importance of the auditory powers in learning to read and at the same time the uselessness of pursuing, with such pupils, a predominantly phonic method. Certainly, they require plenty of carefully planned phonic drills, with simple units, systematically graded and often repeated, but if we are to enable them to progress at all the emphasis must be placed initially upon visual and kinæsthetic methods. For this reason it is important that accurate diagnosis should early be made of their reading difficulties, and in this respect the auditory diagnostic tests provide a reliable means of discriminating them from other backward readers. Teachers should make full use of Test R 5—analysis and synthesis of words containing most common phonic units. Estimates of abilities in sound blending [1] and in oral and written spelling should also be obtained.

5. Speech Defects and their Relation to Reading Disability

In the main this section on speech defects and reading disability is best regarded as a subsection of that on

[1] See p. 143.

auditory handicaps. The relation between speech defects and auditory defects, whether due to an organic hearing deficiency or to a weakness of a mental kind (perhaps at basis a neurological deficiency of a subtler kind) is apparent. The scale of speech attainment is paralleled by a scale of hearing ability; from the bottom of the scale, at which we find the deaf who are dumb and who remain so unless skilfully and continuously taught, we pass through varying degrees of auditory weakness accompanied by corresponding degrees of speech defect, which in the mildest forms presents itself as an inability to discriminate between "f" and "th" or to pronounce correctly such letters as "s," "r," "l."

With most of the backward readers who showed deficiency in speech, the condition was not attributable to an organic condition but to a lowered power of auditory discrimination. The speech defects, in so far as they had an influence on reading disability, were commoner amongst boys than amongst girls. Perhaps the most interesting case was that of a girl, age $10\frac{1}{12}$, whose impoverished verbal attainments were initially due to an organic handicap, now remedied but continuing to operate functionally and emotionally.

Enquiries into the personal history of the pupil Doris C. revealed that she talked at a normal age, but that her walking was delayed until the age of four owing to rickets. This, together with measles, mumps, chicken-pox and whooping-cough, all within a few years, affected physical development, so that she is now quite undersized. Her early rachitic condition also manifested itself in an almost complete loss of her first teeth at the age of five. This seriously handicapped her speech, and as the phonic method of teaching reading was used in the infant department she experienced difficulty in making the sounds. As a result of this and of her general physical condition she became reticent about reading aloud or conversing with others.

Her health during the past three years has been normal

and school attendance regular. Home conditions are good.

In temperament Doris is shy and reserved, even cold in demeanour towards others, so that class teachers have found it almost impossible to get into rapport with the child. She says very few words in reply to questions asked her, but her uncommunicative attitude is not due to sulkiness

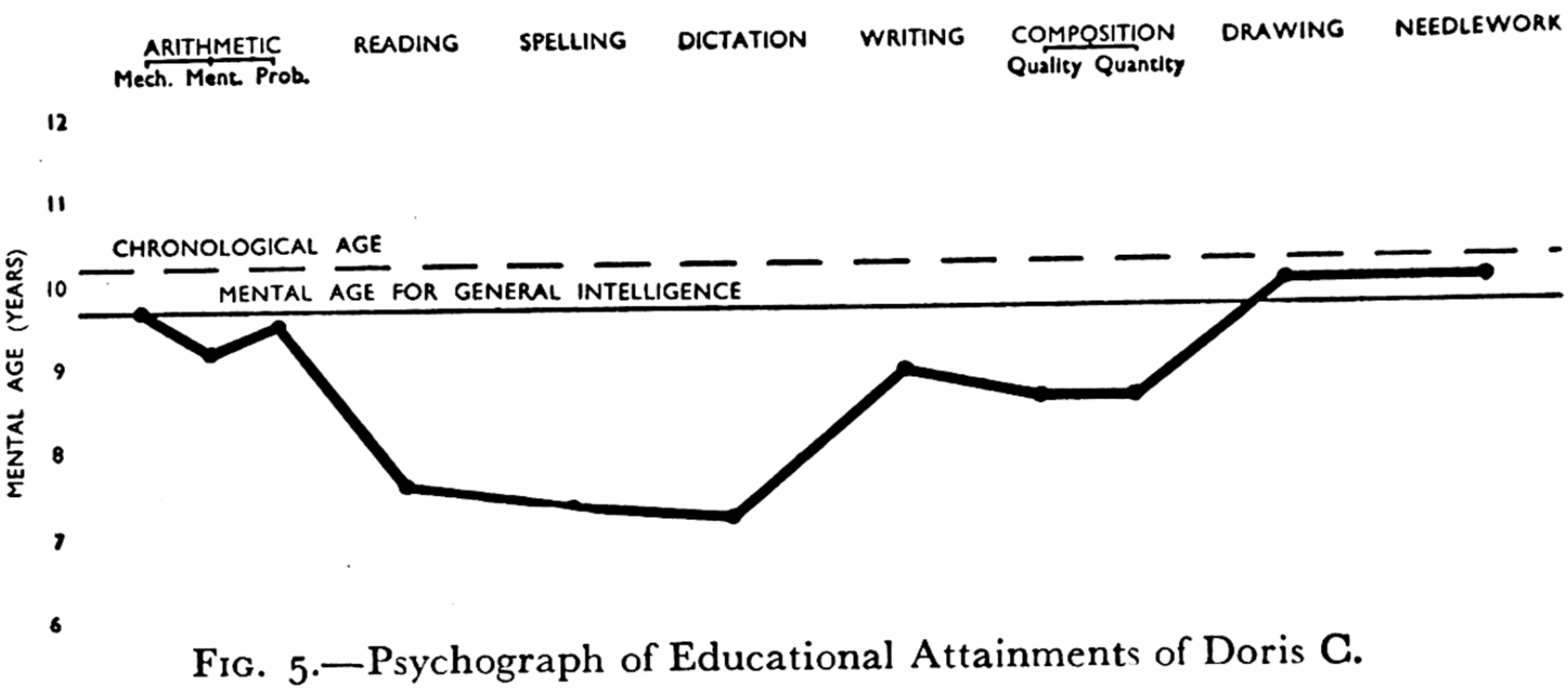


FIG. 5.—Psychograph of Educational Attainments of Doris C.

or antagonism, but to a distinct feeling of inferiority with regard to speech. When she does express herself the words are uttered in a slurred, hesitant manner, very little use being made of the lips, tongue and teeth. Frequently only the first part of the word is said, as in "mard" for "married" and "yessa" for "yesterday." In the Binet-Simon examination her mental age was $9\frac{8}{12}$ (I.Q. 96). Extreme tact was needed to get a measure of her latent capabilities. With a non-verbal intelligence test her mental age was 10 years. Her educational attainments are shown above (Fig. 5).

The psychograph gives a clear contrast in diagrammatic form of her poor verbal ability on the one hand and her much superior arithmetical and artistic abilities on the other.

In diagnostic tests her score revealed a marked deficiency in the auditory discrimination of words similar in sound. In auditory memory for concrete three letter nouns (Chapter

XIII, Test S 2), she reproduced only twenty out of thirty-two words ; seventeen of these (85 per cent.) had " a " for the vowel, but " a " appears in only 40 per cent. of the words in the correct list. Furthermore, the unevenness of her score is symptomatic of a child whose general efforts are hampered by temperamental conditions.

Her reading, in which she was 2·4 mental years below normal, was very slow and uncertain. Her errors were almost exclusively of the auditory type, substitutions of vowels (" big " for " beg ") and consonants, omission of letters (" wate " for " whiter ") and addition of letters (" black " for " back ").

In spelling her retardation amounts to 3·0 mental years and her errors again reveal a marked articulatory-auditory weakness ; thus, in dictation she writes :

> " She came to *sook for seal* a *bards nesd* in the *glass*—the *care* little *caton* "

for

> " She came to seek or steal a bird's nest in the grass—the cruel little kitten."

The most noticeable diagnostic feature about her reading and spelling is that, not only does her weakness in auditory discrimination of phonetic values influence her articulatory power, but a reverse adverse influence takes place. Because of her inferiority concerning her speech, she obtains no practice in articulation of different sound values. The easiest vowel to pronounce, " a," is substituted in many words for vowels " o " and " u " which require a maximum of lip movement. Thus she spells :

" write and read " as " rate and rard "
" pieces of poetry " as " pacea of patrei "
" straight pipes " as " sate papes "

The foregoing evidence indicates conclusively that Doris's disability in reading and spelling is due to a weakness in auditory discrimination, accentuated by an articulatory

weakness and accompanying emotional inhibition in the field of spoken and written language. There seems to be little doubt, too, that her present condition is attributable in some degree to her unfortunate experiences at the age of five when the loss of her teeth and consequent inability to make even approximately correct representations of the various " sounds " robbed her of both confidence and the assistance of a correct articulatory-auditory foundation in learning to read and to spell.

This case study serves to emphasise the fact that speech defects may be important secondary causal factors in disability in reading, for it must be remembered that, whatever the method of learning to read, most young children set up articulatory-auditory units, so that actual saying (either with or without sounds) aids in recognising or in spelling words, as the case may be. Doris, as a result of her early defect, had been handicapped in forming any very strong bonds between the visual symbols and the corresponding auditory values of the words.

6. Stammering

In the present study of 110 backward readers little disability was due to stammering ; only 5 per cent. of the cases showed that their nervous condition had affected their progress in reading. Naturally, as stammering is a condition having its origin in nervous and emotional instability and operating mainly in social situations, any adverse influence arising from it is to be found in the early stages of learning to read and in all oral reading activities. The chief objective is to sustain the pupil's confidence in himself, to prevent him feeling inferior when he is commencing new tasks and to obviate any situations which require him to expose his impediment to others. Liberal praise is essential, but sympathetic individual help and, above all, aid in overcoming the stammering through suggestion, relaxation and improved co-ordination, will indirectly enable him to maintain normal progress in

reading. Stammering is not a speech defect, it is not a sign of inferior intelligence, and it cannot interfere with learning to read if the pupil's self-confidence is maintained.

7. Causal Factors within the Home and the School

With emphasis upon scientific investigation into reading disabilities, the postulation of theories of disability in reading, and the search for an intrinsic cause of backwardness in reading, we are apt to overlook the fact that environmental factors—conditions within the home and the school—may be extremely important contributory causes of the child's meagre reading progress. The most significant of these factors are marked irregularity of attendance and frequent change of school, discontinuity between infant and junior departments, neglect of reading disability cases in junior classes, unsuitability of particular methods for particular children and, lastly, educational immaturity with respect to readiness for learning to read.

The tendency to over-emphasise the intellectual aspects of backwardness in reading leads some psychologists and teachers to minimise the effects of environmental forces and to make inadequate provision and organisation for assisting pupils so handicapped.

(a) *Immaturity: (i) Psychological or Organic*

In the first classes of many infant departments one can find children of five years of age—sometimes of only four-and-a-half to five years in a nursery class—engaged in the formal process of "learning to read." These little pupils are either trying to memorise the sounds of various letters by means of cards, pictures, etc., or else they are endeavouring to associate the meaning of a word or even a sentence with its visual form. The actual method of approach does not matter very much, for in all cases we are soon impressed by the artificiality of the whole situation.

Acquaintance with the reactions of the children reveals that in many instances they are engaged in, what is for them, a purely mechanical task—it is meaningless and joyless. Some of the children are barely applying themselves at all, while others are already showing a look of anxiety and tension. They feel that they are not doing what is expected of them. Actual testing reveals that some of them have made progress with the tasks presented in the last few months, but that there is an unduly high proportion who have gained practically nothing from the instruction.[1]

What, then, causes the artificiality of the situation in which we find these pupils? And what is the reason for the meagre output of so many of them?

The first, most obvious, reason is that the pupils are not interested in the activity; there is no impelling motive for learning the sounds or the words as the case may be, and hence the children do not understand what they are doing. Furthermore, some of the pupils are not intellectually ready to participate in an activity demanding such persistent perception of abstract relationships. Thus, on testing, we find that, although they are all five to five-and-a-half years chronologically, some of them are barely four mentally, yet they are all expected to apply themselves and succeed with tasks demanding a six-year-old intelligence. The absolute futility of the situation is apparent. Nor is it only a matter of failure with certain tasks. The effect of experiencing, early in their school career, activities which are apparently too difficult to understand produces loss of confidence, confusion and a dislike for reading.

In one first reading class, of those pupils who were showing inability to make normal progress after nine months, 37 per cent. had I.Q.'s under 90, while 63 per cent. were normal or supernormal as judged by the Terman Binet-Simon Scale. To what can we ascribe the poor achievements of the second group? With most of these

[1] In ten different first reading classes the number varied from 15 per cent. to 52 per cent. with an average of 22·6 per cent.

pupils it would seem that their apparent backwardness was due either to lack of motivation on the part of the school or to some psychological or physiological immaturity.

The commonest manifestation of mental immaturity is that of delayed ability in visual or auditory perception of letters and words (discussed in detail in an earlier section). The most frequently evidenced immaturity of a physiological nature is that relating to vision. We have reliable evidence that in childhood the eye is immature at the age of five. Naturally, the degree of immaturity varies from individual to individual, just as the level of skeletal development, the standard of neural growth or degree of motor-co-ordination shows considerable variation for different children at the same chronological age level. It is not unscientific to assume that some backward readers are labouring under handicaps of visual immaturity with respect to acuity or eye control or both, and that these handicaps impede them in differentiating similar word patterns or pairs of letters such as, " t, l " ; " o, e " ; " a, s " ; " r, n, u " ; " f, t " ; " i, e " ; and " b, h, d." It has been urged by school medical officers that, from a physiological standpoint, it would be advisable to postpone reading until the child is nearly seven years of age.[1]

The results of recent researches indicate that the factors of mental and physiological immaturity are of considerable importance with regard to early failure in reading.[2] One investigation indicates that a mental age of six years six months is the mental level at which there will be least likelihood of failure with most children.[3]

[1] James Kerr, *The Fundamentals of School Health*, p. 553 (Allen and Unwin, 1926). Bishop Harman, *The Eyes of Our Children* (Methuen). *Report of the British Association on Influence of School Books on Eyesight, 1912.*

[2] See E. Raybold, " Reading Readiness in Children entering First Grade," *Third Yearbook of the Psychology and Educational Research Division.* School Publication No. 185 (Los Angelos, California). J. Murray Lee, Willis W. Clark and Doris M. Lee, " Measuring Reading Readiness," *Elementary School Journal* (1934), vol. xxxiv, pp. 656-666. E. C. Deputy, " Predicting First Grade Reading Achievement," *Teachers' College Contributions to Education*, No. 426 (Teachers' College, Columbia University, New York, 1930).

[3] M. Morphett and C. Washburne, " When Children should Begin to Read," *Elementary School Journal*, March 1931.

Without doubt a reading readiness test is a useful device for determining the possible mental readiness of children for beginning reading, but we should not over-emphasise the mental immaturity explanation of reading disability. We are in need of a series of carefully controlled experiments with groups of children commencing reading at different ages, to provide more detailed information on relative learning rates, amount of retardation and its exact nature, and subsequent progress of the pupils of different I.Q.'s.

Furthermore, intellectual factors are not the only ones in determining initial progress in reading. The emotional ones that are indirectly connected with the nature and extent of pre-school experiences are equally important.

(*ii*) *Educational*

It has been suggested that the concept of backwardness in reading as applied to infant classes is best defined in terms of attitude and understanding—that is to say, the backward reader is one who has not developed the right attitude towards reading. He fails to perceive that it is a way of getting something from the printed word and hence fails to understand what he is doing. (This is the position of pupils who regard the differentiation between "m" and "n" or "for" and "from" as a purely arbitrary one.)

The child's conception of reading is intimately connected with home attitudes towards pictures and newspapers, letters and books, words and speech. Where the vocabulary of the home is extensive and stimulating, where the child is encouraged to look at an adequate collection of suitable books, where he is told stories and shown pictures, where the postman calls daily, and, above all, where the child's progress in language is noted and praised, we have the ideal preliminary experience for learning to read. The young child is extremely imitative and, in normal surroundings, long before he is ready to go to school—even at eighteen

months or two years—he has imitated his parent reading a letter or a newspaper. He has listened to stories from a book and realised that reading is a way of telling stories or of giving news.

Not infrequently the motivation in such homes has been so successful that the child learns to read without any formal instruction. Thus it is not an uncommon occurrence to find a few pupils who can actually read simple material at the age of five. But what of the numbers of elementary school children whose homes offer few of these natural stimulants to the reading situation, the children who have not yet realised that words are connected with books and stories, and that they are a source of most fascinating experiences? For these pupils we should quite definitely postpone formal reading lessons. Not only are they inadequately prepared from an intellectual standpoint, but the bulk of them are lacking in the experiences and the vocabulary which make reading a meaningful activity. They are all cases of potentially backward readers, and at this stage in their school career prevention of misunderstanding, failure and confusion is the obvious objective.

For such pupils we must plan the first part of their school life so as to compensate for the shortcomings of their home environments. Their time in school must be used to arouse a correct conception of the need for learning to read. All motives must be utilised. Stories may be read and re-read; liberal supplies of picture books may be provided; activities may be organised so that the school postman delivers letters; shops with signs and prices may be "built"; transport notices may be displayed; if possible, a model cinematograph may be used with appropriate verbal material; drawings may be made of objects, of pets, and to illustrate favourite stories; songs may be sung and small plays acted; perhaps a small newspaper may be compiled from the children's suggestions and then read to the class. "All enrichment of experience that is suited to the age and interests of the child has a direct

bearing upon his interest in and attack upon reading and upon his reading vocabulary." [1]

Whatever methods are used the objective will be the same, namely, to arouse in the children, through play, story, utility or activity motives, a desire to read and an understanding of what reading means. In this way interest is invoked and emotional incentives are aroused to supplement intellectual abilities and at least minimise the possibility of backwardness through a lack of understanding of the situation.[2]

(b) *Irregularity of Attendance and Change of School*

Absence from school between the ages of 5+ and 7+ is not infrequently an important contributory cause of disability in reading; occasionally there is evidence that the break in continuous instruction is the primary cause of a pupil's backwardness in reading and spelling, but more often the six months away from school or the numerous short absences merely accentuate a weakness already present. Case studies show that many such pupils have, from the beginning of their instruction in reading, been handicapped by an intrinsic deficiency, as, for example, weakness in either visual or auditory perception of words (perhaps acquired or arising from a sensory defect, but more often evidence of delayed maturation in that form of perception). Naturally, these pupils require more than average instruction and additional practice to discount the effects of their handicap, whereas in fact they obtain less than the average amount. Most of these pupils would, under ordinary school conditions, make slow but sure progress, but the extra burden of missed teaching and experience has

[1] For an extremely interesting account of such a plan of beginning reading, see *A First Grade at Work—A Non-reading Curriculum*, by L. E. Wright (Bureau of Publications, Teachers' College, Columbia University, New York, 1932).

[2] For an excellent consideration of the activities connected with the pre-reading stage, see vol. iv. *The Child under Eight*, Ed. Irene F. Serjeant (Gresham Publishing Co., 1935), also *Learning and Teaching in the Infant School*, chap. ii., E. G. Hume (Longmans & Co., 1940).

made the task of learning to read and to spell doubly difficult.

Nor is the factor of lessened instruction the only one accruing from their absence. There is also a psychological one, for this is a period in the child's school life when he delights in individual achievement. He is keen on mastering new activities through repetition and is proud to show you how he can read and what he can spell. The novelty of the school situation, the stimulus of play activities, the desire for power in new fields and the competitive atmosphere produced by companions and teachers, all impel him to apply himself with maximum capacity. In some cases, if the eagerness and spontaneity which characterise most young children in their efforts to learn to read do not receive full and satisfactory guidance during those early years, a kind of linguistic stagnation sets in. Subsequent instruction, no matter how well planned, often fails to produce the enthusiasm and progress that it does with pupils of younger years. This decrease in keenness of attitude towards initial stages in reading and spelling may be due to several factors, chief of which is the depriving of the child either partially or wholly of that environment of play and competition in which his companions first became familiar with simple word forms. Whether the phonic or the phonoscript, the "look and say" or the sentence method of learning to read be employed, it is accompanied in most infant classes by many play devices which constantly stimulate the child's interest and his desire to improve. Games of "snap" with simple words, carrying out orders, acting the meanings of words, competitions in word families, keeping a record of words known and pages read, all add zest to the means of increasing the child's power of word recognition and fixing the fundamentals of spelling.

The child who has been unfortunate enough to be absent for a long period very often finds himself placed, not with the youngest children where this "playway" is still extensively used, but amongst children who have at least mastered the mechanics of reading and who can discriminate with

accuracy some of the simple auditory and visual forms. The teacher endeavours to catch up the thread that was severed by long absence or frayed by frequent gaps in schooling. She gives him some individual attention, but instruction is usually without those aids which were so effective with his companions. His number work does show distinct improvement, his studies in this direction being aided perhaps by help from members of the family circle—not that home assistance is withheld in reading and spelling, but here the well-meant efforts are more likely to confuse than to clarify.[1]

Figures regarding the number of pupils amongst backward and normal readers whose schooling has been interrupted by a long absence or many short absences between the ages of 5+ and 7+ show that the handicap is three times as common amongst the backward readers. Bright as well as dull children appear to be adversely influenced in this way, but throughout the investigation it was noticed that clever children, after continuous efficient schooling had recommenced, had brought their reading and spelling attainments more nearly level with their mental age than those of lesser intellectual capacities, who even at the ages of 11 and 12 were still backward in those subjects.

A case typical of those children where absence, discontinuity, and emotional upset had been important factors in the backwardness was that of Doris L. Doris, aged 10½, with an I.Q. of 105, was a bright-looking girl from a good home. In arithmetic she occupied first position in her class—her mental ages for mechanical, mental, and problem arithmetic were 10·5, 10·0, and 9·8 respectively—but in reading she was retarded to the extent of 2½ mental years and in spelling 3½ mental years.

Enquiry into her early school history disclosed these

[1] To teach a child to read requires pedagogical skill of a much greater degree than that needed to establish successfully the groundwork of number. Frequently the faults of home helpers lie not so much in the methods they adopt as in the material they use ; both in quantity and quality it is ill-suited to the child who can read and spell but a few common monosyllables.

facts. At the age of 5 she went to School A, a small private school where there was little systematic instruction in reading beyond some spasmodic learning of letter sounds. Because of her poor progress her parents transferred her at the age of 6·3 to School B, the nearest London County Council School. Certainly they had selected a school where instruction proceeded on correct lines; but it was the poorest school in North London. For Doris there was a certain amount of emotional upset and unhappiness in the contact with children of less fortunate parents from dingy tenements nearby. Moreover, the routine, essential in a large school, was irksome to one accustomed to the free-and-easy atmosphere of a school of 20 to 30 pupils. As a result of these factors Doris did not apply herself in reading, and short absences through illnesses, mainly of psychological origin, were numerous. Doris remained there until she was 8·0, when a change of residence necessitated another change of school. Her third one was, like the first, a private one and apparently she met with as little success in the matter of adequate teaching as she had done previously, for after a period of five months she entered the junior mixed department of School D at the age of 8½. Six months after this she was promoted to the intermediate department where she has since remained.

The question asked by the discerning enquirer is, "Was the child's retardation in reading and spelling due solely to these five changes of schools between the ages of 5 and 9? Should not the continuous period of 20 months in School B have been sufficient for her to gain mastery over the fundamentals of reading, especially as she was slightly above average intelligence and came from a good home? In answer to the first question it is necessary to note that the changes in school, although important causal conditions, were not the only ones. Doris showed in diagnostic tests a slight weakness in visual discrimination of word forms, to compensate for which she should have had more instruction, not less. Her auditory analysis of words was good, but she failed in both reading and spelling

—most markedly on irregular words. She had received insufficient practice in visual and kinæsthetic methods of recognition and recall.

In answer to the second question it must be remembered that Doris was unhappy in School B. She had commenced as a failure in reading, and progress in reading had become in the home a most important matter. It was, in fact, the reason for transfer from School A to School B—for Doris a disappointing change from a free-and-easy atmosphere to unattractive, uncongenial surroundings. It was little wonder that reading became for her an emotional problem of some intensity.

Doris had carried through the successive schools a definite dislike for reading and spelling. Her main method of attack on words was a slow, phonetic analysis, supplemented in reading by considerable guessing. Her spelling was even worse than her reading, even simple words being written in phonetic form. Thus, two sentences from a composition on "School" ran as follows :

> "We are *nere Crismas* and we are *geting rede* for the *plas* ; our *plas* is *cold* the *thee roseis*. I think it is *verey nise* of *thos tecers* to *wast* their time on *as*."

Her composition showed almost normal attainments in ideas and vocabulary, with a slight weakness in sentence structure.

It is amongst pupils who have missed a considerable amount of schooling or whose reading instruction has been characterised by excessive discontinuity, or who, slow in learning to read in infant classes, have been unfortunate in their subsequent instruction in junior classes or junior departments, that we find some of the most pronounced cases of disability.

(c) *Neglect of Reading Disability within the School*

Rarely is the degree of disability wholly attributable to shortened schooling or to difficulties of discontinuity. Those

forces, in conjunction with intellectual or emotional handicaps, were potent factors in the beginning, but now, for not a few backward readers, neglect of their disability is a disturbing and depressing condition. This does not mean that the class teacher is failing in his duty towards the pupils; but it may mean that the school fails to realise the seriousness of backwardness in reading and to make the fullest provision for remedying it. To what extent does this state of affairs exist in junior classes or departments?

TABLE XV

Attainment Ages of 109 Backward Readers (59 Boys, 50 Girls) in Reading, Spelling and Composition

Age.	No.	Average I.Q.	Averages.			
			Reading Ages.		Spelling Ages.	Composition Ages.
			Accuracy.	Speed.		
8	18	97·5	6·2	6·1	6·6	7·4
9	22	90·2	6·8	6·8	6·8	7·6
10	25	95·7	7·7	8·0	7·6	8·7
11	18	90·7	8·2	8·6	8·0	9·6
12	14	90·4	8·5	9·0	8·8	10·0
13	12	90·0	9·4	9·8	9·1	10·7

An answer to this general question must include answers to three more detailed questions. To what extent is backwardness in reading a serious matter in junior children, *i.e.* between the ages of 7+ and 10+? How much backwardness in reading exists in junior classes? How much of it receives inadequate attention?

Information pertinent to the first question relates not only to reading attainments but to levels in other verbal subjects, particularly spelling and written composition. Evidence of this relationship is provided in Table XV, in which are set out the average ages for reading, spelling, and composition of 109 backward readers, distributed amongst the age-groups 8 to 13 years.

The table clearly shows that in addition to impoverished achievement in reading these pupils also display backwardness in spelling and in composition. In part their correlative disabilities are due to their poor reading, for it is noticeable that many such pupils who begin to progress in reading also show marked improvement in spelling and composition. But it is not only from the scholastic standpoint that backwardness in reading is so serious to pupils (particularly after they have passed from the infant classes as weak readers), but also from the standpoint of normal emotional or personality development. Reading is for the young child an important means of expression, both individual and social, and if this avenue of psychic satisfaction is not only closed to him but the reason for its closure is broadcast to companions and superiors, then his feelings of inefficiency are made doubly great. Very often we find that failure in reading means psychological failure ; the child is unable to adjust himself in this important sphere and his whole school attitude is affected in consequence. The longer the state of backwardness continues the more widespread are its effects and the more difficult is it to arouse in the child genuine effort or interest in order to overcome his weakness. Thus, by the age of 10 or 11 some of those few unfortunate pupils who are still very backward in reading have almost become cases of general backwardness with accompanying emotional inhibitions.

The responsibility of knowing the nature and extent of reading backwardness throughout the school should rest with the head teacher. Naturally, the class teachers know the backward readers within their particular groups, but this is not enough ; reading backwardness is a school problem just as much as it is a class problem. It is not an over-statement when we say that the major objective of the junior classes should be to assist every pupil so that he can read and understand what he reads by the age of 10+. It will be claimed that some children are so dull that the task of intelligent reading is too great for them, but this explanation will only apply in exceptional circumstances.

For one child with an I.Q. of 80 or even 70 who cannot read there are at least five with similar I.Q.'s who can read. Furthermore, the number of pupils in some special schools for the mentally defective (I.Q. range 50-70) who can read tolerably well is really most surprising and encouraging.

No other instruction that the school imparts has such functional value in after-school life as reading. What does it avail the child if he can multiply 869 by 97 correctly, or knows the coalfields of England, but cannot read with speed and understanding? His multiplication attainments or his geographical knowledge will rarely function in every-day life, whereas reading is the very cornerstone of his existence, occupational and leisured.

Hence provision for detection, diagnosis and teaching of those children who have not learnt to read adequately by the age of 7+ should be the primary concern of all head teachers who have junior classes within their schools. It is idle to suppose that in some instances the problem does not exist, for in every junior class or department, whether it be in a good or a poor area, there are backward readers of varying ages and degrees of disability.

The most reliable estimate of backwardness in reading is obtained by the use of standardised tests in oral and silent reading, judged both for speed and accuracy. Sample figures for two junior schools, taken from a number amongst my record files, are as follows :—

School A. (Junior Mixed). Enrolment 298. *Very Good Area.* Cases distributed (*a*) according to class, (*b*) according to age.

	No. B.	No. G.		No. B.	No. G.
Class 7	9	2	Age 7– 7·11	5	1
,, 6	3	...	,, 8– 8·11	6	1
,, 5	2	2	,, 9– 9·11	7	3
,, 4	4	1	,, 10–10·11	...	1
,, 3	...	1	,, 11–12·	1	...
,, 2	...	...			
,, 1	1	...			
Totals	19	6	Totals	19	6

Thus in this school the percentage of reading disability is 9 per cent. amongst the boys, 6 per cent. amongst the

girls; and of the 25 backward readers (19 boys, 6 girls) only 4 of these were dull, the remainder (21) had I.Q.'s above 85. The degree of disability ranged from 1·7 to 4·7 mental years.

School B. (Junior Mixed). Enrolment 291. *Poor to Average Area.* Cases distributed (*a*) according to class, (*b*) according to age.

	No. B.	No. G.		No. B.	No. G.
Class 7 . . .	10	4	Age 7– 7·11 . .	6	1
,, 6 . . .	7	1	,, 8– 8·11 . .	8	3
,, 5 . . .	...	...	,, 9– 9·11 . .	5	2
,, 4 . . .	2	1	,, 10–10·11 . .	3	...
,, 3 . . .	4	...	,, 11–12· . .	1	1
,, 2 . . .	...	1			
,, 1 . . .	...	...			
Totals . .	23	7	Totals . .	23	7

In this school the percentages of backward readers are 15·3 per cent. boys, 4·6 per cent. girls; and of these 30 pupils, 12 could be classed as dull, while the remainder had I.Q.'s between 88 and 120. In all cases except one, a girl whose mental age for word recognition was 1·2 years below and for speed 4 years below normal, the degree of backwardness ranged from 2 to 4·9 mental years.

The average figures for all classes and all departments for all backward readers, *i.e.* including dull children who are backward in most subjects, is 9·6 per cent. boys and 5·9 per cent. girls.

Having considered the first two questions, namely, the seriousness of backwardness in reading and its distribution in junior classes, we now turn to the third question—inadequate attention to pupils backward in reading.

Various degrees of neglect of reading backwardness do exist, and we have already referred to one of its possible causal conditions—the fact that reading disability is not viewed by some head teachers as one of the most important school problems.

Evidence of inadequate provision for backward readers is to be obtained from several sources:

(*a*) Actual cases within the schools.

(*b*) Continued test results, over varying periods up to

eighteen months, with a small group of backward readers receiving individual attention, compared with a group who were left to the usual classroom methods of aiding backward readers.

(*c*) The number of pupils who pass into senior classes or senior departments, *i.e.* pupils of 11 years of age and over, who are still very poor readers.

Two cases illustrative of the first point will suffice. Albert W. absent from school with conjunctivitis failed to make normal progress in the infant classes. Promoted to the junior school, no adequate diagnosis of his disability was made, and he continued to remain extremely backward in reading and spelling. Then at $8\frac{2}{12}$ he had the misfortune to lose the sight of his right eye as the result of an accident in the playground. This necessitated a long absence, and when he returned at the age of $9\frac{1}{12}$ he was extremely conscious of both his physical affliction and his scanty linguistic attainments. He was a clever boy and, with sympathetic teaching, could have overcome his backwardness. Instead of this he simply drifted along, his backwardness in reading and spelling being constantly excused by his past absence. He took little part in reading, spelling and composition, in which his poor scores only aggravated his sensitive temperament. What he hungered for was some sympathetic individual assistance with his problems. He confided in me that he began to think that the loss of his eye had hindered for ever his chances of learning to read and to spell. Here, then, was an obvious case of neglect. Six months' individual instruction, in which liberal praise was a prominent factor, soon reassured him that his actual mental abilities were unimpaired. He made no less than 1·7 mental years' gain in reading and 1·1 years' gain in spelling. But what was most gratifying was the change in his mental attitude; his facial expression brightened and he gained considerably in self-esteem.

Another case (from an all-standard school) was that of a

boy, aged $13\frac{3}{12}$ (M.A. 10·9), who had spent several years in an open-air school. No one had taken the trouble to diagnose the exact cause of his disability in reading or to give him short systematic lessons of a scientific kind, with the result that his present attainments in reading and spelling were only equivalent in mental years to 6·3 and 6·8 respectively. Here, as the result of neglect combined with a perceptual weakness, was a boy going out into the world practically a non-reader.

Details regarding the second point previously postulated, namely, the comparison of backward readers given systematic individual attention daily, compared with those left to ordinary classroom methods, are given in the next chapter on remedial teaching; but general reference to this aspect of reading backwardness clearly demonstrates the amount of neglect that prevails with not a few backward readers.

Almost every backward reader is capable of progressing in reading, provided his condition is accurately diagnosed and he is helped daily by short lessons suited to his individual needs. Thus, the evidence from the results of remedial work showed that both dull and normal pupils whose reading disability was treated in this way (that is, they were given one, often two, thirty-minute lessons daily for an average period of six months) made between 0·75 and 1·75 mental years' progress in reading, while corresponding groups left within the class organisation for reading made only 0·1 to 0·3 of a mental year's progress. In a few cases of backward readers, receiving only ordinary classroom instruction, where records have been kept continuously for eighteen months or two years, of standardised reading tests given every six months, the paucity of progress was most striking. Some pupils between the ages of 7+ and 9+ were practically at a standstill with regard to reading attainments, yet the intellectual power was there in latent form waiting to be gradually released by appropriate measures.

The vital question arising from the evidence of the foregoing paragraphs is, " How and why does such neglect

of backward readers take place?" In the first place, little of the neglect is conscious. It is due to force of circumstances—a combination of ignorance and of inadequate organisation. Thus, where discontinuity between class and class, or infant department and junior department, is a factor in the neglect of the backward readers, we find that such pupils come into the class of a teacher who is not versed in infant methods of teaching reading. Some help is given but not along the correct lines. For all slow readers from the infant classes it would be to their advantage if they were placed in the class of a teacher who had taken a course in infant methods of teaching reading and spelling. Sometimes the teacher considers that the child will pick up his reading as time goes on and therefore pushes ahead with the syllabus of the class; but further work built on insecure foundations tends only to confuse the unfortunate child, whose linguistic handicap increases rather than diminishes.

In addition, there are two other conditions which contribute towards neglect of backwardness in reading. Firstly, there are pupils the diagnosis of whose disability requires a certain degree of psychological knowledge. For them the opportunity of scientific assistance is rarely provided. Secondly, to be successful, remedial work with very backward readers must be individual, and a busy teacher of 40 or even 50 pupils finds it practically impossible to set aside the time required. Thus there is both training and organisation required to deal adequately with neglect of backwardness in reading.[1]

8. Emotional Factors as Determinants of Reading Disability

Backwardness in reading is very closely related to emotional attitudes. A pupil's initial failure in reading may be due partly to emotional attitudes formed during the pre-school period, and subsequent failure may be

[1] Constructive proposals regarding this are discussed in the next chapter.

influenced considerably by this early failure in what is, for the child, his first large community.

Thus some of the most difficult cases encountered during the present research were over-dependent, pampered children whose attachment to their mother robbed them of the initiative and self-reliance needed to make the necessary independent steps in reading. One boy, aged $8\frac{7}{12}$, reading age 5·7, was extremely timid and very dependent on his mother ; he played little with other children and preferred to spend most of his time helping his mother in the house. During several periods of illness he had been the object of still more intense maternal care and anxiety. As a result of this unwholesome attitude at home he made little effort when faced with difficulties. His backward reading worried him little, and when school was over he put aside all attempts at reading and was happy busying himself in a completely dependent way in the domestic affairs of his mother.

Whilst reading he made no attempt to guess words through pattern or context. His sole reading ability consisted in a very slow, inadequate, letter-by-letter analysis.

A similar emotional condition, but one of a more intrinsic kind, was the state of emotional instability that characterised some pupils and influenced their powers of concentration and application.

Occasionally, emotional attitudes of an almost opposite kind were manifested in the children's backwardness. Far from lacking confidence or power of application they applied themselves with vigour, but in a purely artificial way. The outward show of superior confidence and ability was compensatory. Their errors in reading are characterised by wholesale guessing of an incorrect kind. One of this group informed me that she read quite hard books to her mother, but that her reading was " going off a little lately.". Although aged 9 years she only managed to attain a reading level of 6·0 mental years.

Sometimes it would seem that reading aloud too much to a young child will hinder him from making a real

attempt to learn to read himself. This is particularly noticeable where, in addition, too much is done for the child in his daily routine (dressing, eating, etc.) and in his constructive activities (painting, making toys, gardening, etc.). He develops a laziness of mind and a certain over-dependence on adults when difficulties arise. Thus in reading, where he is faced with the situation of having to remember the words, he wants some one else to solve his difficulties. His reading is characterised by a great deal of aimless guessing, after which he will often request the adult to read the material for him. In such cases encouragement of independence by allowing the pupils to do more for themselves shows itself in a changed attitude towards reading. A mixture of praise for genuine efforts made and of bargains effected on the basis of reading done by the pupils in return for reading by the adults also produce improvement.

It is, however, from the mental effects of failure that most emotional difficulties arise.[1] The sense of failure before companions, teachers and parents weighs heavily upon pupils, and in time not only undermines self-confidence and self-esteem but breeds an apathy and dissatisfaction that causes the child to turn away from reading and to seek success elsewhere. One boy of $13\frac{1}{2}$ who could not read and who had found success and satisfaction in woodwork and football, simply refused to try any more at reading. "I'm leaving school soon, so what's the good now" was his argument. He had passed the stage when he was willing to try once more.[2]

9. Plurality of Causes in Reading Disability

Backwardness in reading is seldom due to a single factor. It is true that there is usually a factor of dominant importance, but in 76 per cent. of the boys and 83 per cent. of the girls there was also one or more minor contributory

[1] Fuller consideration of this is given in Chapter X on "Remedial Teaching."

[2] See *The Education of Backward Children* (chap. ii, by Lucy G. Fildes), Editor. H. R. Hamley (Evans Bros. and the Institute of Education).

factors. Sometimes these subordinate factors were in themselves quite distinct forces acting conjointly with the primary cause to accentuate the backwardness. At other times the minor causes were the direct outcome of the major—as was the case in those pupils who had developed an attitude of inferiority on account of their failure.

Causal conditions, primary and secondary, combine to produce in certain pupils a marked deterioration in emotional adjustment, while for a considerable proportion of backward readers the adverse influences associated with their failure are a barrier to normal personality development. In this respect we must emphasise the importance of intellectual and experiential immaturity as early causative influences. Both conditions can in themselves produce emotional difficulties, and these are made worse where home conditions are such as to accentuate these already existing deficiencies. It is therefore vital to realise that reading failure represents a total failure and that it demands, as Mrs Highfield has shown in her recent book, "The Young School Failure,"[1] a remedial programme involving the total personality development of the backward pupils.

[1] *The Young School Failure*, (in the press), M. E. Highfield (Oliver & Boyd) Mrs. Highfield's book, based on experimental work with backward children, will be of great value to teachers in infant and junior departments.

CHAPTER X

REMEDIAL TEACHING OF BACKWARD READERS

If remedial work with backward readers is to be effective, a teacher should have at his disposal detailed information from a thorough diagnosis. He should know the types of errors, the nature of past instruction in reading and the direction of present interests, educational and non-educational.

As a means of securing progress in reading, he must also aim at dispersing the inhibitions and conflicts that have resulted from failure in this particular field. His remedial methods must have therapeutic [1] as well as pedagogical value. Hence, the general principles upon which remedial teaching of specifically backward readers should be based are as follows :—

(*a*) Individual attention.
(*b*) Correct attitude of teacher.
(*c*) Use of materials related to the dominant interests and motives of the child.
(*d*) Selection of method best suited to the child's difficulties.
(*e*) Short, continuous lessons of a systematic kind.

Before discussing in detail methods and materials useful to backward readers, it will be fruitful to consider briefly the significance of these five guiding principles.

(a) *Individual Attention*

Results of remedial measures reveal that what the backward reader requires most is a measure of individual

[1] Some maladjusted pupils may even need a preliminary period of play therapy to enable them to adjust themselves to school work in general and to reading in particular. See *The Education of Backward Children*, M. E. Hill, chaps. iv and v (Harrap & Co., London).

attention. Often he has been the victim of class instruction and of unsuitable methods. He has limped along at the end of a group of children, most of whom were succeeding tolerably well ; he has cried out for individual consideration of his difficulties, but in many instances his cry has gone unheeded or unsatisfied. It is essential that the pupil whose poor reading attainments have been openly and continuously paraded before parents, teachers and companions should receive a proportion of private, individual assistance. With many of the backward readers in the present study, it seemed as if the individual consideration shown to them was as important as the accuracy of the diagnosis or the suitability of the remedial methods used. When the backward readers spent a short time each day with the teacher they were able to concentrate fully on the recognition and memorising of word forms in an atmosphere of minimum distraction and maximum motivation ; they were able to ask questions without fear ; they could proceed at their own rate and, above all, they were encouraged to make efforts that brought forth praise rather than responses that awakened feelings of inferiority and inadequacy, as had often occurred when they tried to read in front of their fellows.

Individual work with backward readers is thus beneficial for teachers as well as for pupils, since it provides fuller insight into pupils' attitudes and the causes of their inaccuracies than can be gleaned in any other way.

(b) *The Attitude of the Teacher*

If inspiration and encouragement are needed to stimulate the very backward reader, it is apparent that the teacher's attitude is of paramount importance in remedial work. He must be actively aware of the individual differences in children. He must realise that in normal school progress there are emotional barriers which exert a more powerful influence than intellectual ones. He should be conversant with the psychological effects of failure in reading, bearing in mind that pupils failing to make adequate progress in

reading pass successively through periods of dismay, loss of confidence, apathy, and finally retreat, for a child only continues an activity in so far as he is satisfied by its results. Interest, success and praise are the incentives which spur him to further efforts, and when these diminish he turns to other activities more satisfying to him. Occasionally, these substitute occupations, from which he derives psychic satisfaction, provide obvious evidence of general maladjustment. He may become difficult in class, he may show delinquent tendencies or set up attitudes of aggression, bluff, fantasy or self-excuse. Thus, in many cases the teacher has not only to teach the pupil to read, but, before he can commence, he has to dispel the apathy towards reading and help in readjustment.

(c) *Use of Materials related to the Dominant Interests and Motives of the Child*

The nature of the start made with the backward reader is important, for an early success on the part of the child has a more lasting effect on further efforts than any early persuasive or educational efforts on the part of the teacher. Hence, in initial lessons the reading material should be simple. It should be below the standard of difficulty already reached by the pupil, and it should relate to some topic in which the pupil is really interested.

Experience shows that it is best to compile for the child an individual reading book on the topic selected. In the main, regular words used with a high degree of repetition should form the reading material for the first few lessons. It is useful to talk about the topic [1] with the pupils. Facility in using the relevant words in conversation enables the pupil to make full use of contextual clues for word recognition.

[1] In four cases that come to mind, where the subjects selected were "Red Indians," "Racing Pigeons," "Model Yachts" and "Farmers," the conversation that centred round these sources of interest led to a more intimate bond between teacher and pupils.

(d) *Selection of a Method Best Suited to the Child's Difficulties*

Although backward readers differ from one another in so far as they display particular errors in different proportions, they resemble one another considerably in that their attempts at word recognition show gross perceptual deficiencies. Backward readers display a relatively small number of particular errors and comparatively large number of general errors. Any method which places undue emphasis upon remedying particular errors will inevitably lose some efficiency in improving general errors. Hence, in selection of methods, although it is advisable to note individual errors, it should be remembered that the recognition of words is attained by visual, auditory, articulatory, grapho-motor and meaning cues, and that a judiciously blended emphasis upon the several means of recognition best suited to the pupil is likely to produce a greater improvement than isolated drills on particular inaccuracies. For this reason the remedial work undertaken with backward readers includes exercises for specific difficulties only in correctly proportioned amounts and only after progress has been initiated in a general way.

It is usually best to pay little attention to specific types of word errors, such as a pupil's confusion of " b " and " d," since not infrequently time is wasted on such a procedure and further confusions are set up by specific measures. In many instances it is better to view the error in relation to the total disability unless a particular type of error, for example substitution of vowels, is quantitatively significant. More time can thus be devoted to broader error groups (for example, knowledge of common phonic units) or to building up, for the pupil, as rapidly as possible, a small reading vocabulary through a comprehensive meaningful method, using memory and the manual cues of writing and tracing as strong supplementary aids.

(e) *Short, Systematic Lessons*

Short, frequent lessons—thirty minutes twice a day is an ideal time allotment, but where this is impossible then even five minutes morning and afternoon—have greater value than longer periods at less frequent intervals. It would seem that assistance morning and afternoon keeps the pupil interested and enables him to apply himself better in so far as he remembers his errors and more easily recalls cues from previous lessons. Where the busy class teacher has other calls upon her limited time, it is a useful expedient to give the backward reader five minutes' individual aid with new material and then to refer him to an older pupil helper or to a better reader in the same class for assistance with revision reading and with tracing and writing.

Some measure of individual attention on the part of the teacher *should always be given* ; the time absorbed is well repaid by the gain in personality adjustment on the part of the backward reader.

Finally, it is necessary to be systematic with the record of the material used, with the grading of vocabulary difficulty, and with the revision of material. Continuous care in these directions contributes considerably to the progress made by the backward pupils.

METHODS OF TEACHING BACKWARD READERS

One of the outstanding difficulties in teaching backward readers is to lead them to observe words in a systematic and accurate manner. All of them have formed, for various reasons, an inaccurate attack on words, some showing it most markedly in auditory analysis, others revealing it more in visual analysis of words, so that any method which will cause the child to observe words more carefully through additional external means is likely to produce progress. This was realised by Fernald and Keller [1] when they

[1] Grace M. Fernald and Helen Keller, "The Effect of Kinæsthetic Factors in the Development of Word Recognition in the Case of Non-Readers," *Journal of Educational Research*, pp. 355-377, no. iv, December 1921.

successfully used, with a group of backward readers, a method which laid stress on the manual cues of writing and tracing, and on articulatory impressions from saying words. Naturally, these overt responses were only intermediate steps to enable pupils to recall words through their visual and auditory characteristics, but as the reading cases taught by Fernald and Keller were of normal intelligence and had for several years failed with other reading methods, it is clear that the overt responses are justifiable even if they appear slow and laborious at first. The method includes the five stages :

(1) *Learning Initial Words*

The child is asked to select a word he would like to learn, this being then written on the blackboard in large script. He looks carefully at the word, saying it to himself and tracing it with the first two fingers of his preferred hand—that is right or left according to the hand used in writing—in contact with the copy. This is repeated several times until the word is known, the tracing of the word being always carried out with a pencil or in the air. The pupil next writes the word from memory, saying the syllables as he writes. If he is unsuccessful the process is repeated until the word can be written from memory, after which it is shown in printed form. Several words are learnt in this way, but the child is not at any point allowed to copy the words. Next day the child is shown the printed forms of the words only and he writes them from memory, unknown words being retaught along the original lines. In this way the child builds up a small reading and spelling vocabulary around a topic of interest.

(2) *Reading Sentences*

After the child has acquired a number of words, sentences are written at his suggestion on the blackboard and these are studied in a similar way—saying to himself,

tracing and saying, writing from memory. The sentences, and others made from the same words, are then printed or typed on cardboard and form the first pages of his reading book. This continues with a very light vocabulary burden of new words until he can master a working number of simple sentences.

(3) *Reading a Story*

The child is next allowed to select a simple story which is worked over in the following way. New words in the first few paragraphs are printed in a column on cardboard and exposed one at a time through a slit; each word is pronounced, after which the pupil pronounces it and writes it from memory. The words are revised by exposing them one at a time through the slit, any difficulties being surmounted by recourse to the script-tracing-saying-writing procedure.

(4) *Perception of Phrases*

When the words can be recognised immediately without hesitation they are exposed in phrases, just enough time being allowed to recognise the words as a phrase and not as single words. Here again the exposures are repeated until the pupil has assimilated the words in phrase form.

(5) *Reading of a Paragraph for Comprehension*

When an entire paragraph has been worked over in this way the pupil is instructed to read it over silently and then to tell what he has read about.

The first few books are treated in this manner, after which the pupil is encouraged to read to himself.

The results achieved by Fernald and Keller are without doubt encouraging. Many of their cases attained a reasonable fluency after five or six months. It is obvious that the merit of the method is the commendable emphasis it places

on tracing and writing in order to particularise and regularise the observation of words. The pupil is forced to attack words correctly and to make an effort to remember their visual and auditory forms ; the backward reader's vague, changing methods of word observation which, through repeated failure, have come to be supplemented by considerable unscientific guessing, are not allowed to enter into such a method of teaching reading.

Two criticisms of the method are, firstly, the large amount of time required to take a pupil through a simple book by means of the word exposure—writing and phrase exposure—writing method ; and secondly, the possibility of making the pupil so dependent upon kinæsthetic aids that he does not make sufficient use of visual discrimination and auditory analysis of word forms. To start off a very backward reader in the initial stages where early success is urgently required, the Fernald-Keller method is without doubt unsurpassable, but experience shows that economy of time and effort on the part of pupil and teacher, with increased efficiency at later stages, can be achieved by introducing into the reading scheme, after several weeks, exercises to aid the child in detecting differences between visual patterns of words and in acquiring a comprehensive phonic knowledge of regular forms.

Gates' Remedial Methods

The remedial teaching of backward readers, as described by Gates, outlines as a major objective the building up of correct visual habits in respect of words. This is attained by use of detailed preparatory exercises with new words, before they are attempted in the ordinary reading materials. Thus, he says, " the setting for each new word should be carefully worked out so that the word is surrounded with such abundant and suggestive context clues that the pupil will be quite sure to figure it out promptly and correctly.[1]

[1] A. I. Gates, *The Improvement of Reading*, p. 272, Revised Edition (The Macmillan Company, 1935).

The preparatory exercises provided are far from being merely word drills. They embrace the use of pictures and of colouring, cutting and matching work, which ensure that the pupil really knows the words in a variety of contexts. For example, preparation with the two words "hutch" and "rabbit" would include pictures of the objects with the words under them and instructions to colour the illustrations. The next step would be to demonstrate the dissimilarity of the visual patterns between these words and other words. Thus the pupil would be required to draw a line under the sentence that tells about the picture. For example:

This is a hat
This is a hutch (Picture of a hutch)
This is a hill

This is a robin
This is a rat (Picture of a rabbit)
This is a rabbit

In a further step the words would be used in other settings with material already studied.

Most words to be used in the reading material are studied in this way from a variety of angles and in a variety of settings, so that when the pupils turn to the actual reader they are well equipped to read and understand the material presented. Gates says that the "development of a reading vocabulary thus becomes an intrinsic phase of genuine reading; it becomes a natural and necessary result for reading for thought."[1] It is not artificial in so far as words are always used in relation to illustrations and in context, and it sustains interest in so far as the words are assimilated through activities.

[1] A. I. Gates, *The Improvement of Reading*, p. 280, Revised Edition (The Macmillan Company, 1935). See the *New Work Play Books* by A. I. Gates, M. B. Huber and C. C. Peardon, with the accompanying Preparatory Books containing preparatory word exercises involving colouring, drawing, underlining words, etc. (Macmillan Company).

Monroe's Programme for Backward Readers

The teaching methods advocated by Monroe contrast sharply with the two previously outlined, for her emphasis is upon the specific treatment of particular difficulties, so that the basis of the approach is a phonic one. She selects for treatment :

(*a*) Faulty vowels and consonants.
(*b*) Reversals.
(*c*) Addition of sounds.
(*d*) Omission of sounds.
(*e*) Substitution of words.
(*f*) Repetition of words.
(*g*) Addition of words.
(*h*) Omission of words.

In order to remedy errors under the first heading, Monroe says that the aim should be " to build up, so far as possible, the ability to discriminate speech sounds." [1] Her plan was to mount on cards pictures of several objects beginning with the same consonant or containing the same vowel :

e.g.,	" b "	baby, boy, bear.	" t "	table, top, tie.
	" c "	cat, coat, cake.	" sh "	shoe, ship, shell.
	" n "	nest, nose, nail.	" ch "	chair, cheese, chick.

Sample vowel lists were as follows :

" a "	cat, man, lamp.	" o "	bottle, box, top.
" e "	egg, red, hen.	" i "	pig, milk, ship.

In developing discrimination, unlike sounds were first selected ; for example, " m " and " s " were first compared by means of cards. The " m " and " s " pictures were placed together and the child was asked to articulate " s " and then to say the name of the object on the card. From this step practice in discrimination proceeded to subtler differences ; for example, the cards showing " s "

[1] *Children Who Cannot Read*, p. 117, Third Impression (University of Chicago Press).

and "sh," "b" and "p," "m" and "n" would be grouped and contrasted. Assistance was given to the pupils in making the various sounds; they were actually shown the phonetic differences between "m" and "n," "p" and "b."

Drills in sound discrimination were varied by asking the child to give words beginning with certain sounds.

With the vowels, differences between long and short forms were demonstrated through words and speech training.

The next step aimed at establishing associations between the letters and their most frequent sound, manual tracing being employed to reinforce retention where necessary. The pupil traced over a model of the letter, at the same time saying the sound. The process was repeated and the associations were revised until the pupil knew the sounds by sight without tracing.

The next step was to combine consonants and vowels into simple, regular words and then to develop the remedial work on the basis of the recognition of words from their sound components. Considerable use was made of sounding-tracing in learning new words.

The method is a thorough-going phonic one, based on careful preparation and progress by easy stages.

Grades of phonic stories based on the interests of the pupils were used as material.

Extremely useful as is the remedial programme outlined by Monroe, mention might be made of two points. It is questionable whether very backward readers who have laboured so long under their disability respond as well to a plan of remedial teaching in which the initial steps consist of rather dull drills and mechanical work as to one in which the aim is to enable them to read quickly a few lines about a topic in which they are interested. We have to remember that the attitude of backward readers is likely to be one of apathy or even opposition to reading instruction. Without doubt there must be careful analytic work such as that outlined by Monroe, but there is the possibility that this should come as the second, not the first step in the remedial

teaching. Furthermore, in view of the variety of errors made by most backward readers, it is clear that the time devoted to remedying particular types of word errors would have to be carefully considered against the child's total error profile and in view of his subsequent rate of progress.

A Comprehensive Method of Teaching Backward Readers

Details of a plan of remedial teaching used by the author with a group of very backward readers are given in the following pages. No originality [1] is claimed for it except with regard to the method of application, where every care was taken to make the teaching comprehensive in its intellectual aspects and varied in its emotional appeal.

Stage 1. Memory Reading to arouse Confidence

When a child has failed in a particular type of situation or activity a fundamental factor in the early stages of remedial treatment is to re-establish his confidence. He should be given definite proof that he is not deficient in any ability and that he can attain to the desired level of conduct or activity in a normal manner. As in dealing with a liar we endeavour to re-establish confidence in himself by trusting him in different situations, and in treating a stammerer we definitely demonstrate, by requiring him

[1] Useful information and significant suggestions were obtained from the detailed remedial teaching outlined in the following :—

(*a*) G. Fernald and H. Keller, " The Effect of Kinæsthetic Factors in the Development of Word Recognition in Non-Readers," *Journal of Educational Research*, pp. 355-377, no. iv (1921).

(*b*) A. I. Gates, *The Improvement of Reading* (The Macmillan Co.). *Interest and Ability in Reading* (The Macmillan Co.).

(*c*) W. S. Gray, *Remedial Cases in Reading : Their Diagnosis and Treatment*, Supplementary Educational Monographs, No. 22 (Department of Education, University of Chicago, 1922).

(*d*) G. Hume, " A Study of Backwardness in Reading among London Elementary School Children." (Unpublished Thesis in the University of London, 1926.)

(*e*) M. Monroe, *Children Who Cannot Read* (University of Chicago Press, 1932).

to sing or whisper certain material, that he can speak without hesitation, so in commencing remedial teaching with a backward reader the objective should be to arouse confidence in his ability to read. This was achieved by enabling each backward reader to learn a short poem, suited to his age. The poem was learnt by repeating it after the teacher, effective cues for reading being set up by requiring the pupil to write from transcription the initial word of each line. When the poem was thoroughly known the teacher read it with the pupil, fitting the spoken line to the written line and emphasising the initial words. The pupils then read their respective poems and in most cases obtained a high percentage of success in their first attempt. Younger pupils were allowed to select picture units which they transcribed on to separate sheets and then illustrated, finally putting them together into a " book " of three, four or five pages. These they were encouraged to take home and read to their parents, a further step in re-establishing the child's confidence and in securing parental co-operation for future remedial work.

Stage 2. Learning Words connected with a Topic of Interest

Having dispelled a certain amount of apathy and loss of self-esteem, the teacher could now further encourage the pupils to apply themselves to this " new way of learning to read." From oral learning of material *plus* actual memorisation of the visual patterns of a few words in key positions, the next step in difficulty was the memorisation of word patterns connected with a topic of interest. Each backward reader was asked what he would like to read about, and the topic chosen was then discussed ; the pupil contributed what he knew, the teacher supplementing this with a few additional interesting facts.[1] The preparatory conversation

[1] Where the number of very backward readers is large, the teacher may prefer to develop one topic or centre of interest for all the pupils. This has the advantage of enabling the teacher to provide extensive preliminary experiences that will lead to a comparatively rich and varied language background. So often backward readers require help in acquiring a meaningful spoken

created a meaning background that was useful not only in recognition but in comprehension of what was to be read. Thus, in the case of the boy, chronological age $9\frac{7}{12}$, reading age 5·9, who wished to read about Red Indians, there was first stimulating talk about Red Indians, after which a few important words were selected for study. These words were "Red Indians," "live," "wigwam" and "sleep," which were mastered by saying and tracing, and by writing from memory. Accompanying the assimilation of a small vocabulary about the selected topic was the formation of a picture dictionary. Each pupil was provided with a note-book with an alphabetic index, and into this book he transcribed under the appropriate letter headings the words he learnt, at the same time placing opposite each a small illustration wherever this was possible. Drawing, colouring and cutting out were used to add pleasure to the reading lessons.

When the pupil did not recognise a word during revision he was asked its initial letter and referred to his dictionary. This exercise provided valuable training in observation of words in so far as he had to carry the pattern of the word in his mind to compare it with other words and to recognise it finally as the same word in his book and in his dictionary.

In addition, cards were used for learning the words. From the collection of books, papers, catalogues, magazines, and cigarette cards (so necessary if the activity method of teaching backward readers is to be used) stored in the cupboard, we cut out pictures of a Red Indian woman and a wigwam. Two sets of cards were prepared, one

vocabulary before they can apply themselves with any degree of understanding to printed words. The spoken vocabulary thus built up prevents them from approaching words as artificial and arbitrary symbols. The printed words then mean something to the pupils. Obviously supplementary reading devices (drawing, picture cards, nature calendars, etc.) used side by side with the teaching programme will all help to develop word and phrase vocabulary and to imbue the process of reading with interest and everyday significance. For guidance in this direction, particularly with very backward seven-year-olds, see *Psychology and Learning in the Infant School*, chap. v, G. Hume (Longmans), and *The Child Under Eight*, vols. i-iv, Edited by F. I. Serjeant (Gresham Publishing Co.).

bearing the name and the picture (Card A) and the other bearing only the name (Card B). Pupils learnt the word



Card A

Wigwam

Card B

through association with the picture and through matching exercises :

(*a*) Pupils look at pictures and words.
(*b*) B cards are then mixed up and pupils put them on top of words on the A cards.
(*c*) The words are then cut off A cards and mixed up, and pupils have to put correct words to pictures.
(*d*) Pictures are taken away and pupils match pairs of words.
(*e*) Pupils are asked to read each word.

Pupils also said (or sounded) the word and at the same time traced it with the fingers of their writing hand. Then they tried to write the word from memory—if they failed they said the word again and traced it and then rewrote it. They were not allowed to copy the word in writing it, but always had to write it from the combined visual, auditory and kinæsthetic impressions. Next day the words were revised and another three or four new words were similarly learnt. After twenty words were so learnt, sentences were compiled in the reading book—three or four per day.

Specimen Pages of Reading Book

Page 1. This is a wigwam.
This is a Red Indian wigwam.
Red Indians live in a wigwam.
Red Indians sleep in a wigwam.

(Illustration of a wigwam.)

The new words "sleep," "live" and "this" were learnt by a saying or sounding-tracing-writing method supplemented by cards with pictures. Where words lent themselves to illustrations, the pupils sometimes drew the illustrations for the card; thus "sleep" was illustrated on the card by a child in bed.

Further development of this particular interest was:

Page 2.	This is a Red Indian. He is a Red Indian man. He is called a brave.	(Illustration of a brave.)
Page 3.	This is a Red Indian. She is a Red Indian woman. She is called a squaw.	(Illustration of a squaw.)
Page 4.	The squaw lives in a wigwam. She sleeps in a wigwam. The brave lives in a wigwam. He sleeps in a wigwam.	(Illustration of brave and squaw.)
Page 5.	The Red Indian is a hunter. He shoots wild animals. He can trap animals. He sets his traps in the snow. Wild animals get into his trap.	(Illustration of Red Indian and animal.)

The words are large and well spaced and the pages are illustrated. Care is taken each day to revise previous words and not to compile more than three or four sentences each lesson. There is ample repetition each time of words both old and new.

Revision of each page was carried out by printing a duplicate page and cutting it up into words and then requiring the pupils to fit the words into their correct lines. This presented certain difficulties, and required repetition of the reading, recourse to the picture dictionary and further tracing and memory writing with a few words.

Emphasis on comprehension was encouraged as far as possible at this stage by silent reading of each page and by allowing pupils to recount to one another the material on the various pages of their books.

During each day, from three to six new words were learnt according to the rate of progress and previous attainments of each pupil. At the end of two weeks, when books of from three to six pages had been compiled, illustrated and read with absolute accuracy, all books were collected and rewritten by the teacher, actual illustrations being used wherever possible.

Stage 3. Reading New Material by Preparatory Study of Difficult Words through Tracing, Writing and Memorisation

Next, the pupils changed books, and each pupil tried to read his partner's book. Tracing and writing from memory were used when difficulties still existed. Revision and additional practice in word recognition were then carried out by the pupils working in pairs; each child knew his own book, and with the aid of the picture dictionary could carry out a certain amount of teaching with his partner. This occupied, according to the regularity of the lessons and the progress made, from one to two weeks. It was noticeable that, where parental co-operation was full and regular, progress was greater.

Stage 4a

In the fourth stage a simple text was selected and pupils read it with liberal pupil or teacher help. So far no word drills, games for rapid recognition, or methods of phonic analysis had been used. The objective in the beginning of the remedial treatment was simply to create a reading interest and a reading attitude through parental aid and through some progress with selected material. Naturally, maximum progress was not obtained, because there were deficiencies in word attack and in the visual and auditory analysis

and synthesis of words, deficiencies which required specific as well as general remedial treatment. Accordingly, after three to four weeks' work with the backward readers, some discrimination in the nature of the individual assistance was made on the basis of their particular reading faults. This discrimination never usurped the main reading practice; it was only used as an adjunct at different times.

Stage 4 b. Differentiation of Individual Work on the Basis of Individual Difficulties

A comprehensive case study of the backward readers had revealed that in the main they laboured under one or more of five major difficulties. These were :

(*a*) A weakness in the discrimination of phonic units, that is in detecting differences between them—particularly those similar in sound—and in remembering them.

(*b*) A lack of knowledge of common phonic units, through insufficient or unsystematic teaching, but not any actual weakness in discriminating them or in remembering them once they had been effectively taught.

(*c*) A weakness in the discrimination of visual patterns of words, especially with words having patterns visually similar ; *e.g.* "live," "have."

(*d*) An extremely unsystematic and irregular attack on words—parts of words (beginnings, middles or ends) being used as the basis of extensive guessing.

(*e*) An extreme tendency to observe words from right to left or from the middle of the word to the left, and showing itself in confusions, partial reversals and complete reversals of small words.

Obviously, not all the backward readers could be readily sorted into separate classes according to this schedule of

major difficulties ; not a few of the pupils exhibited overlapping difficulties, so that the grouping of some of them for this specific remedial work was considerably simplified. One point of importance to be noted before discussing the exact nature of the specific instruction for the different difficulties is, that although various drills and devices were used for aiding the pupils in overcoming weaknesses, they were not divorced from meaningful reading—in most instances the word drills being in the nature of preparation for or revision of actual reading material.

(a) *Weakness in Discrimination of Phonic Units, that is in Recognising Differences between them and in Remembering them.*—The causes and nature of weakness in auditory discrimination of speech sounds has been fully discussed with illustrative case studies in Chapter IX, and to this, in particular to the cases of Albert, Sidney and Hilda B., the reader is referred for fuller significance of the present section. It will be sufficient at this point to enumerate briefly the types of errors made by these backward readers. Their errors are :

(i) Weakness in associating the sound with its correct visual symbol, more pronounced with vowel and consonantal digraphs than with single letters, and with longer than with shorter words ; *e.g.* " said " is read as " sad," " bright " as " brit."

(ii) Inaccuracy in blending sounds ; letters of words may be sounded correctly, but blended incorrectly ; *e.g.* " w-i-n-t-e-r " read as " wind " or " window."

(iii) Frequent omissions, substitutions and additions of letters ; *e.g.* " hurt " read as " hut, " nose " read as " noce," " ground " read as " groaned."

(iv) Auditory distortions in spelling ; *e.g.* " young " written as " juntn," " turned " written as " tonta."

It is obvious from the nature of the errors of these backward readers that remedial work should stress learning

through visual and kinæsthetic means and that maximum use should be made of the meanings of words. In general this principle was observed, but in so far as the auditory impressions of words are also of vital importance in reading, it was necessary to aid them to overcome their weakness in auditory discrimination by specific measures. It was necessary to make clear and to emphasise for these pupils sound differences that normal pupils assimilated naturally in the early stages of their reading instruction. Thus, for the very backward readers, the first step was to take in turn the consonants, and to emphasise their sound values through lists of words, each commencing with the same letter. One consonant per day was covered in this way, partly by visual and kinæsthetic methods and partly through a speech training approach. Firstly, simple speech exercises were taken [1]—for example, with " t " rhymes such as these were said :

" Time for tales ! Time for tales ! "

" ' Tick-Tock ! Tick-Tock ! '
Says the grandfather clock."

" Tales of tigers, teddy bears,
Tramp ships, tom-cats, tinker's wares,
Turnips, tea-trays, toast and sailors,
Telephones, tramcars, tents and tailors."

Then a list of simple words was compiled. The pupils were encouraged to provide words starting with " t," suitable ones for group reading and illustration being selected ; thus the " t " list included " Tom, town, trap, tree, tart, truck, toy, two, twenty, tub, top."

Cards were next prepared having a picture or diagram with the " word name " on one side and only the word on the other. Pupils then went through the cards saying the

[1] Considerable help was obtained from *The Playway in Speech Training*, by R. Bennett (University of London Press), and *Speech Training and Practice*, by A. Chapman (Oliver and Boyd Ltd.).

word as indicated by the illustration and then repeating it from the other side. After this they were given a simple reader and asked to point out all the words either commencing or ending with " t," whereupon the teacher said the word and the pupil repeated it.

Next day the pupils read, with help, a piece of prose containing the words they had studied the previous day; in the case cited it ran as follows :

> " Tom went to town and got a toy truck, a new top and a toy table. He came home and took his toy truck out on to the grass and put in it twenty-two stones."

The material included words with " t's " in initial and final positions, and, although absolute accuracy in reading such passages was neither achieved nor aimed at, the work with them served the very useful purpose of strengthening the pupil's knowledge of visual-auditory association and of aiding him in phonic analysis.

A game of " I Spy " was very popular with the pupils. Each backward reader was given a chance to say :

> " I spy
> With my little eye "
>
> [Something beginning with ——, all the letters of the alphabet being taken in turn],

while the other pupils guessed the word. To begin with, the game was kept to objects within the room, and later it was extended to objects " outside in the street," " in the grocer's shop," " in the greengrocer's shop," etc.

The next step in this auditory discrimination work was to strengthen the pupil's impressions of the letters and their sounds by contrasting them with dissimilar ones. Thus, a lesson would be devoted to the study of words commencing with " t " and with " m " ; with " g " and " s " ; or with " h " and " n." Words would again form the first steps. There would be sorting of word cards into piles according to their initial letters, and simple exercises such as these, in

which the pupils would put a cross at the end of the line that told about the picture :

This is a man.
This is a top.
This is a tree.



I am on the table.
I am on the mat.
I am on the milk.



When this level of discrimination has been developed the pupils could probably join with others who were revising common phonic units.

(b) *Lack of Knowledge of Common Phonic Units.*—One frequently finds amongst backward readers a large number who have insufficient knowledge of the common phonic units,[1] not because of any present auditory weakness, but as a result of past handicaps such as a mental immaturity of associating sound and symbol, unsuitable teaching methods, absences or insufficient individual assistance.

The pupils do not lack powers of auditory discrimination—they are different from those in Section A, who require special exercises to help them discriminate—but they lack the phonic knowledge, gained by experience, of tackling new words. These pupils sound common combinations such as "ow," "oy," "ur," "sh," "ou," as separate letters, and then attempt to blend the sounds into words. When the pupils have had experience of the sound combinations and practice in recognising them, they make marked improvement in reading. This lack of knowledge is very clear evidence of the fact that, whatever methods are used in teaching reading, a child must have direct experience of phonic analysis of words.

[1] It is now a well-established fact that after pupils have acquired a small reading vocabulary of forty or fifty words some phonic analysis should be introduced into the reading programme to supplement the sentence method. See *Happy Venture Readers* (Oliver and Boyd Ltd., London) based on this plan of sentence and phonic methods.

Simple phonic analysis was first taken with three-letter words, and pupils were required to go through the following list giving the correct phonic constituents : the method of phonic analysis—either the initial blend, *e.g.* " c-at," " st-op," or the letter analysis, *e.g.* " c-a-t," " st-o-p "—most familiar to the child was accepted. To help those weak in auditory discrimination, cards with the word on one side and a picture on the other were prepared.

a	*e*	*i*	*o*	*u*
bag	bed	big	box	bun
can	den	dip	cot	cup
dad	fed	fig	dot	dug
fat	get	him	fox	fun
gas	hen	jig	got	gun
hat	jet	kid	hot	hut
jam	leg	lid	job	jug
lap	met	mix	mop	mud
man	net	nip	not	pup
nap	peg	pin	pot	run
pan	set	rim	rob	sum
ran	ten	sip	top	tub
sad	wet	tin		
tap	yet	wig		
van				

Auditory discrimination was also developed by taking words across the page, *e.g.* " bag," " bed," " big," " box," " bun."

Next, a review was made of the common vowel and consonantal digraphs in the earlier stages of reading. The various lists are given below, so that full use should be made of the meanings of the words in enabling the child to absorb them into his reading vocabulary ; groups of five or six words were incorporated into a piece of prose for applied reading practice. I have found that in carrying out supplementary phonic drill with backward readers it is much more effective to use the initial blend method—that is " s-ea," " h-ear," " h-ow," " r-ain," etc.

Specimen Prose Piece

Dick, Tom and Dora are in the *tree.*
Can you *see* the *three* of them in the tree ?
" I can see Tom's *feet* in the tree," said Jack.
" I can see Dick's feet in the tree.

I can see Dora's feet in the tree.
I can see six feet in the tree."
"Have you *been* in a tree, Jack?"
"Yes, I have been in a tree."

The next piece was about a pet mouse and included the words "meet," "street," "need," "feed," "seed," "sleep."

Words containing Common Consonantal and Vowel Digraphs for Use with Pupils Lacking in Phonic Knowledge

ee	*ea*	*oa*	*ou*	*oo*	*ow*
see	eat	coat	our	look	now
tree	sea	boat	out	book	how
three	tea	road	about	took	cow
been	each	oak	sour	cook	down
deep	beat	goat	flour	good	growl
keep	meat	load	shout	wood	town
feed	heat	soak	spout	stood	brown
feet	ear	cloak	loud	foot	tower
need	hear	foam	cloud	tool	shower
seed	dear	roam	proud	pool	flower
week	clear	coal	found	cool	
weed	feast	coast	round	food	row
wheel	team	toast	ground	school	snow
meet	clean		mouse		glow
street	stream		mouth		blow
sleep	speak				show
bleed	read				bow
sheet					follow

ay	*ai*	*ie*	*oe*	*ew*	*oi*
say	rain	die	toe	dew	oil
day	pain	pie	foe	few	boil
pay	train	lie	hoe	mew	toil
way	again	tie	woe	new	spoil
bay	chain	died	Joe	blew	spoilt
hay	strain	tied	goes	chew	coin
lay		tried	toes	flew	join
tray	air	cries	foes	drew	joint
away	fair	tries		knew	point
play	pair	pies		grew	
stray	hair	skies		crew	
gray	chair	flies		threw	
	stair			news	
	pail				
	tail				
	mail				
	nail				
	paid				

aw	*oy*	*ue*	*ng*	*ing*
raw	boy	true	song	sing
paw	toy	blue	long	ring
saw	joy	glue	sang	king
jaw			hang	wing
law			rang	swing
claw			rung	sting
straw			hung	bring
draw			dong	thing
lawn			sting	spring
yawn			stung	string
hawk				having
crawl				trying
shawl				

sh	*wh*	*ch*	*th*	*ck*
ship	what	chop	this	Jack
shell	when	chip	that	duck
shin	why	chat	then	neck
shop	where	chin	than	pack
show	which	chap	them	rock
shut	while	chest		pick
short	wheel	chair	thin	lock
dish	whip	child	thick	clock
fish	white	teach	think	chick
crush		latch	thatch	stick
push		stitch	thank	thick
bush				
dishes				

Common Letter Combinations

igh	*ar*	*ir*	*qu*	*ur*	*er*
sight	arm	fir	queen	fur	her
high	car	sir	quilt	curl	fern
night	bark	girl	quick	burn	herd
light	hard	bird	quack	hurt	perch
might	hark	first	quiet	turn	after
bright	large	dirt	quietly	purse	
sight	barge	firm	quickly	churn	
right	start	shirt	quench	nurse	
tight	sharp	third		purr	

This is not a comprehensive phonic list, but it indicates the lines along which systematic instruction should be given to pupils who show insufficient familiarity with common phonic combinations. Throughout the remedial teaching, these drills were supplemented by phonic treatment of any words which the pupil did not know in the easy texts used for reading practice. For example, if the pupil could not

recognise the word " trick," the part "-ick " was detached and he was asked to recognise " s-ick," " l-ick," " w-ick " then " trick " ; if it was discovered that the unfamiliar part was " tr " he was at once given additional practice with words such as " tree," " trip," " train," " trunk," " trap," and with sentence reading such as : " I got a trunk for my trip on the train."

Combinations so taught in the course of a lesson were reviewed in the next lesson.

Along with the digraphs listed above, some work was done in making pupils acquainted with long vowels. Attention was first drawn to the difference between the short a, e, i, o, u, and the long forms by pairs of words, as :

mat	pet	kit	rod	tub
mate	Pete	kite	rode	tube

Then lists of words, similar to those below, containing long vowels, were studied to accustom pupils to the final " e " :

a	*e*	*i*	*o*	*u*
take	here	like	rose	cube
gate	there	nine	nose	tune
made	where	hide	rope	June
make		ripe	hope	tube
safe		pine	rode	
wake		wine	bone	
name		bite	pole	

The word drills were supplemented by exercises in word building and in making longer words from shorter ones.

Such a thoroughgoing course of phonic work might be criticised as artificial and unnecessary, but where pupils show weakness in phonic analysis then conditions demand such supplementary remedial procedure.

It was found throughout the remedial teaching that the phonic course brought about marked improvement in many pupils. Pupils, who in infant classes had benefited but little from phonic instruction, derived much help from it at the

age of 8, 9 or 10, probably because their increased mental maturity enabled them to take fuller advantage of this analytic-synthetic method. Because of their increased maturity one can proceed very quickly with the work. The course should be taken only as *a minor part* of the reading programme. *Pupils should spend most time in learning to read meaningful material.*

(c) *Weakness in Discriminating Visual Patterns of Words.*— The causes and characteristics of this common reading fault have been discussed in Chapter IX, Section I. (*a*), pp. 153-156, while diagnostic aspects of the deficiency have received ample consideration in Chapter VII. It is a sufficient guide for remedial work to recall that pupils labouring under this handicap tend to omit, substitute, add or transpose letters in their reading according to the similarity between the pattern of the word recognised and that of a known word. The pupil lacks the power of distinguishing fine differences in word structure so that pairs such as the following are confused :

for, form ; waiter, water ; dad, bad ; apple, able ; upon, apron ; coast, cost.

Like deficiencies in auditory discrimination, weakness in visual discrimination of word patterns is considerably improved by remedial measures of a special kind. The devices that can be used are numerous, and those given in the following paragraphs are simply the exercises that proved of most practical value in the remedial work.

(i) A device [1] which develops keen discrimination of word patterns is that of labelled matchboxes. Pairs of matchboxes containing pictures of objects, actions, etc., with somewhat similar names, which are pasted on the outside of the box, are shown to the pupils. Wherever possible, words are taken from the text being used by the pupils. For example, the following pairs of pictures and corresponding names were used :—

[1] Adapted from a game devised by Dr Decroly.

salt	seed	chalk	church
three	throws	bud	mud

well	doll	hop	top
small	tall	shoe	shop

The pupil sees the picture and then looks at the name on the lid, thereby fixing the association in his mind ; as the pairs of words have some structural resemblance there is need for discrimination. Learning is tested by such requests as " Pass the salt, please " ; " Show me the box that has the seed in it." A variation in testing that calls for further discrimination is to take the lids off eight or ten boxes, jumble lids and boxes and ask the pupil to sort them out correctly. This can be followed by quick reading of sentences embodying the words ; *e.g.*

We have three rabbits. I bought my new shoes
Jack throws the ball. at the shop.

(ii) Word matching aids the child in observing differences and similarities in words. This should first be done by the aid of pictures. Prepare a number of cards with pictures on them and print underneath the word that the picture represents ; a similar number of separate slips with the printed words on them are also prepared. All are placed in an envelope and the children are required to match the pairs.

It is advisable to select all words from the class readers being used by the backward pupils.

(iii) Picture and phrase matching introduce meaning as well as recognition into word drills. To begin with,

these should be simple and should be graded in sets. Discrimination can be introduced by including phrases which have words of similar structure.



At the shop



In the park



On the seat

(iv) Picture cards may also be used for aiding the pupils to discriminate between pairs of words which cause difficulty in recognition. For example, cards of this kind may be used for helping the pupil :



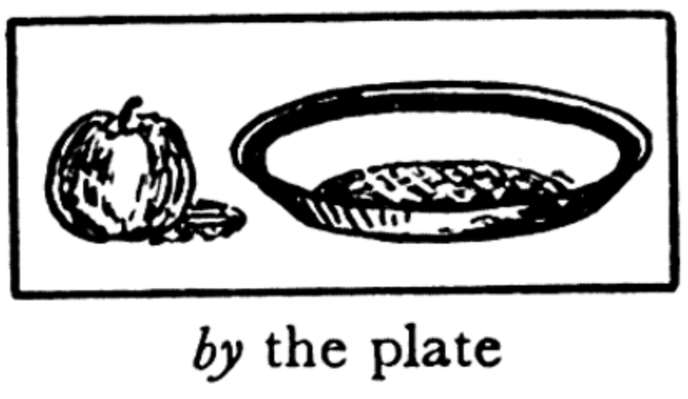
shell



shelf



on the plate



by the plate

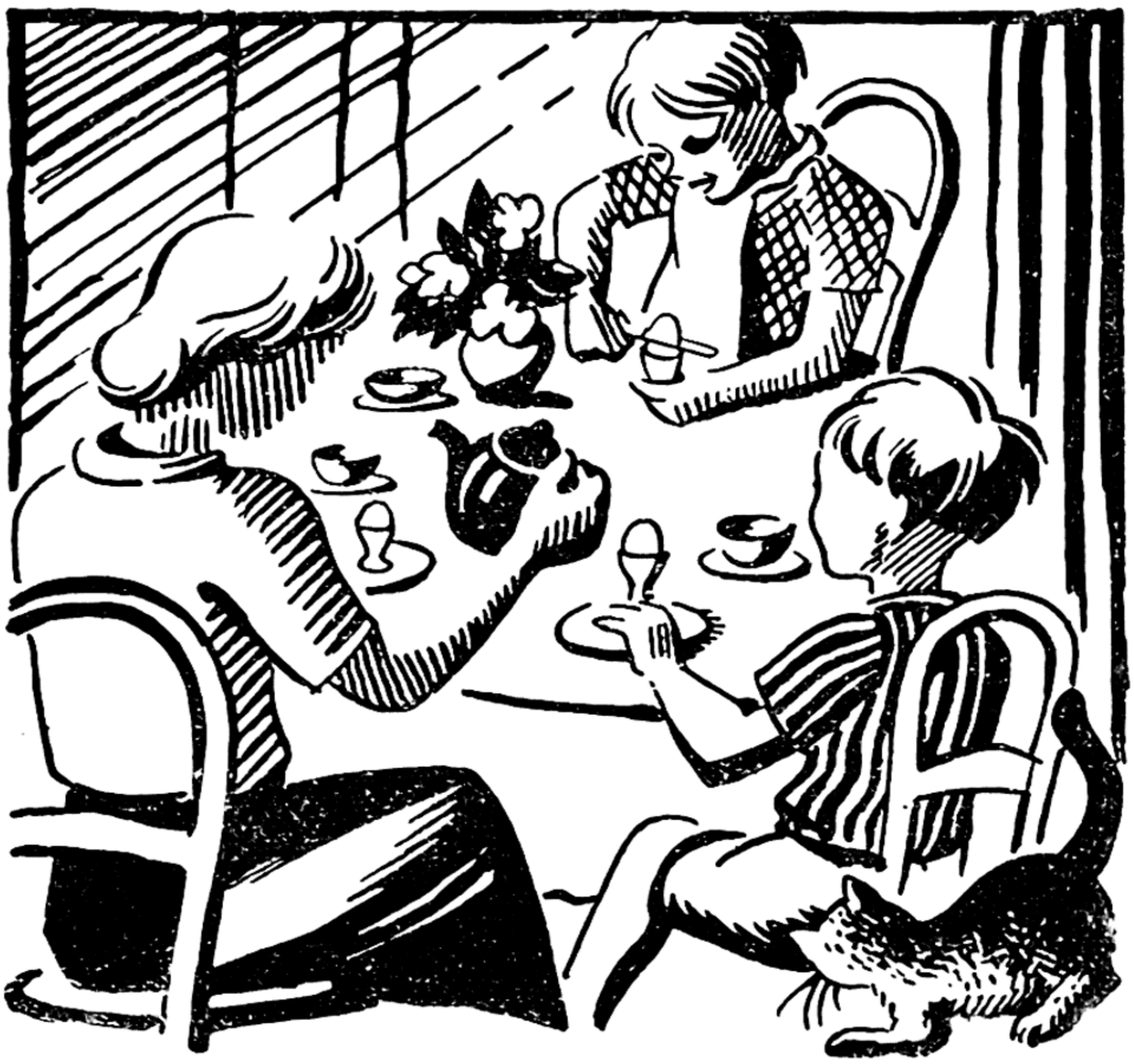
(v) An extension of an earlier exercise is to provide pupils with pictures which are accompanied by two phrases or sentences, one of which applies to the picture. Pupils are required to indicate or write down the number of the correct sentence. An example is as follows :—



(1) Nip chases the ball. (2) Nip catches the ball.

It enhances the value of these and previous exercises if some of them contain words in which the pupils have already shown "discriminatory" errors. These can easily be obtained if the teacher writes down some of the errors she hears each day from the backward section of her readers.

(vi) An interesting device for children is to provide each with a picture and the names of items in the picture printed on pieces of paper.



egg | egg

Dick | Mother

Fluff | Jack

cup | cup

Then let the pupils put the words on their appropriate places in the picture. A variation is to give short simple instructions, such as :

1. Give Dick an egg.
2. Give Jack an egg.
3. Give Jack a cup.
4. Put Fluff by Jack.
5. Give Mother a cup.

(vii) A further modification of picture cards which involves discrimination is the use of envelopes containing 3, 4 or 5 pictures which tell a short story and which have to be sorted into their correct sequence with the correct sentence underneath. Alternative sentences containing

words similar to some of the words in the appropriate sentences are included in the envelope :



Dick dresses himself



Dick is in bed



Dick has his breakfast

Also in the envelope: Dick washes himself. Dick reads a story.

There are many other devices which aid in developing powers of recognition, but remedial work indicates that the best results are obtained when pupils are taught to make full use of the meanings of words and are helped to notice similarities and dissimilarities in word structure in the actual reading texts. It is for this reason that very simple reading material used over and over again to teach occasional new words is so helpful with backward readers. Maximum value is obtained from meaning, and maximum attention on the part of the pupil can be devoted to new words when they occur with old material in a new setting.

(d) *Unsystematic Perceptual Attack on Words, and* (e) *Tendency to Perceive Words from Right to Left.*—These two faults result in a tendency for pupils to jump at known letter combinations within the word, whether they be at the beginning, in the middle or at the end of the word, and a tendency to reverse small words or to partially reverse larger ones (see Chapter IX, pp. 156-69, for details and illustrative cases).

Measures for use in decreasing these two factors are :

(i) *Allow pupils to use a pencil or their fingers when reading* —this overt aid leads them to commence the perception of words from the left.

(ii) *Encourage all backward pupils to employ cursive writing* for their reading-spelling-writing activities. The continuous flow of cursive writing, together with the complete patterns of words which are thus produced, prove of direct value to backward readers and spellers in enabling them to record stronger kinæsthetic images of the words.

(iii) *Closely link spelling and reading.* For some of the backward readers the words were first studied as spellings and then embodied in material that was later read. Learning to spell the words encourages a more careful scrutiny of words, particularly in a left-to-right manner. Groups of words in the " Essential Spelling List " were taken for spelling and then used as a basis for reading exercises—psychologically this is the reverse attack, for expansion of reading and meaning vocabulary should always precede spelling vocabulary, but any departure is pardonable if the child's reading is improved thereby.

(iv) *Use the sounding-tracing method of teaching new words* as frequently as possible (see earlier in the chapter).

(v) *Employ writing as a means of leading pupils* to observe words from left to right. A paragraph is first read through by the teacher with the pupils, who then write it, afterwards reading it to one another.

Monroe [1] finds it helpful to give this type of backward reader spaced typewritten material to read. After a sentence has been read, as a result of pupil-teacher

[1] *Children Who Cannot Read*, p. 128.

cooperation, then each pupil writes the sentence under the typescript, thus :

One morning monkey said,
One morning monkey said,
" I will go out and meet
" I will go out and meet
rabbit to-day."
rabbit to-day."

Sometimes an inaccurate perceptual attack on words results from failure in reading as well as being an initial causal factor of it. As the pupil continues to fail he grasps hopelessly at any part of a word that seems familiar to him. Early success with easy material in the remedial work helps to lessen these emotional states, and perceptual attack shows some improvement as progress is made irrespective of the effects of specific measures.

Improvement of Weak Readers

In order to check the results of the remedial work, two groups of backward readers were selected. Group A were given some planned individual assistance in reading, while Group B (Control Group) received only ordinary classroom teaching in the subject. Some of the remedial teaching was carried out by the teachers, acting on suggestions made by the author, while some was done by the author himself. The amount of teaching varied from fifteen to thirty minutes daily and in nature followed the lines laid down in the present chapter.

Changes in reading attainments were judged from the reading ages which were calculated from Burt's and Schonell's standardised reading tests every three months.

The chronological ages of the backward readers in both groups ranged from $7\frac{6}{12}$ to $11\frac{2}{12}$ years and represented all grades of reading disability.

A comparison of the reading ages of pupils in Group A (Experimental Group) with those in Group B (Control Group) provided a measure of the effectiveness of planned individual assistance in reading disability as compared with

TABLE XVI

Reading Results of Experimental and Control Groups

Number of Cases.	Average C.A. when Remedial Work First Started.	Average I.Q.	Average Reading Ages.		Average Change in Months.	Average Time of Experiment.
			Initial Test.	Final Test.		
Results of Group A						
31	$9\frac{6}{12}$	90·1	$7\frac{3}{12}$	$8\frac{6}{12}$	15 months	9·1 months
Results of Group B						
54	$9\frac{7}{12}$	91·2	$7\frac{2}{12}$	$7\frac{7}{12}$	5 months	9·1 months

the help the pupil receives through ordinary classroom methods. Table XVI shows the results of the initial and final tests with each group.

The range of gain in Group A was from 41 months to 5 months, while the range of change in Group B was from 11 months to 4 months.

The results demonstrate clearly the need for some form of individual assistance to the really backward reader. They show that insufficient is done to decrease the backward reader's disability if he is left to the usual classroom instruction. The results are verification of the statements made in earlier chapters that backward readers respond exceedingly well to planned reading instruction of the right kind. Qualitative examination of the results reveals that on the whole the more intelligent pupils make greater progress under the effects of remedial teaching than do the less intelligent, but that there are pupils of medium intellectual power who make much more gain than others of greater general intellectual power.

Planning Reading in Junior Classes

In most infant classes the teaching of reading receives adequate scientific attention. Although there may be

teachers who adhere too closely to a particular method—too much phonic work or a too-exclusive sentence method—the results achieved are very satisfactory. But this is not always the case in junior classes and junior schools. Here one too often finds over-adherence to the time-honoured method of oral class reading. There are too few classes where the pupils are sectioned for reading and where the sections are taught according to the reading attainments of their members. This rigid class teaching means consequent neglect of individual problems.

Throughout the present investigation the apparent weaknesses in the teaching of reading were observed to be :

(*a*) Insufficient flexibility of methods in reading lessons.
(*b*) Insufficient individual attention given to very backward readers.
(*c*) Insufficient practice with varied supplementary reading material for average readers of 7, 8 and 9 years.
(*d*) Insufficient silent reading for all pupils at least passably proficient in word recognition.

Perhaps the outstanding need in most classes is to increase the actual amount of practice obtained by pupils and to differentiate in the material for pupils of different achievements. When the range of reading ability in any junior class is considered it is apparent that class teaching is the least efficient way of providing for individual problems. Consider, for example, these results (typical of many) from a *second* class in a junior school ; the spread of reading ages is as follows :

Chron. Ages.	No. of Boys.
7- 7·11	1
8- 8·11	20
9- 9·11	15
10-10·11	2

Reading Ages.	No. of Boys.
4- 4·9	2
5- 5·9	2
6- 6·9	7
7- 7·9	4
8- 8·9	12
9- 9·9	7
10-10·9	3
11-11·9	1

The actual range is from a reading age of 4·2 to a reading age of 11·1 years, that is a range of 6·9 reading years.

It is true that 23 out of the 38 pupils fall within the intervals 7·0 to 9·9, but nevertheless pupils at the extremes must also be considered.

It is obvious that boys with reading ages between $4\frac{1}{2}$ and $6\frac{1}{2}$ should not be asked to take part in the same lesson with the same material as boys of reading ages $7\frac{1}{2}$ to $10\frac{1}{2}$. Those with reading ages round 5 and 6 cannot read what is suitable for the better-equipped pupils, while the latter merely waste time if asked to listen to the halting efforts of the weaker readers. Yet not infrequently this is done. Few teachers make the same error in arithmetic, a less important subject. Here they would have two or three sections working from different material or from sets of examples so carefully graded that appropriatc provision could be made for all levels of arithmetical ability. The solution to the reading problem set by the above class is obviously sectioning—two or three sections with reading material suited to the average reading level of the scction. It is not necessary, of course, to keep always to sectional teaching of reading ; group reading with juniors is just as effective. If we allow, with a junior class, five lessons per week for reading, then the use of these might profitably be as follows :

(*a*) One oral lesson per week when 10 or 12 pupils read, and when the emphasis is upon correct speech, expression and development of vocabulary.
(*b*) Two lessons per week when the class is taught in sections.
(*c*) Two lessons per week of group reading.

Class Sections for Reading Lessons

It is a relatively easy matter for all class teachers with junior pupils to give a standardised reading test to determine their pupils' reading ages, which can be used as the basis for forming the sections. The same or similar tests [1] can

[1] "Graded Reading Vocabulary Test," C. Burt, *Handbook of Tests* (P. S. King). *The Standardisation of a Graded Reading Test*, P. E. Vernon (University of London Press). *The Psychology and Teaching of Reading*, F. J. Schonell (Oliver and Boyd Ltd.).

be used for checking progress every six months. In classes of pupils aged 7+ to 9+ there is usually a weak group varying from 8 to 16 pupils (Section B) who require maximum practice and help. This can be achieved if Section A are given twenty minutes' directed silent reading from their class reader. Questions and exercises (see next chapter) on new material may be written on the blackboard. It is necessary to set sufficient questions covering sufficient pages to provide for the spread of reading ability within Section A, where there will be some boys and girls who can read fast and accurately. Naturally, this means providing plenty of reading material. Pupils should be given more reading texts than is often the case at present. There is still too much analysis and detailed discussion of stories and extracts. Let the pupils read as much as possible. With a minimum of assistance their vocabulary and general knowledge will increase rapidly.

While Section A is carrying out directed silent reading, the teacher can help each member of Section B with oral reading. Occasional word drills on a particular sound or consonantal digraph are quickly taken on the blackboard. For example, it is found that " ground " is not known by five boys in Section B ; quickly the teacher helps by building, on the blackboard, words containing the two elements of difficulty :

gr-ab	and	s-*ou*-nd
*gr*unt	,,	r*ou*nd
*gr*ew	,,	f*ou*nd
*gr*ass	,,	p*ou*nd
*gr*een	,,	b*ou*nd
*gr*ind	,,	h*ou*nd

An occasional use of jingles or rhymes also helps in this work :

" Hark, listen to the sound
Of the merry-go-round."

" Yesterday I found
On the road—a pound."

Thus any gaps or deficiencies in auditory analysis are repaired side by side with actual reading in a natural way. Every member of the backward section reads a paragraph or more (according to the number in the section). At the end of fifteen or twenty minutes these pupils are then set to read to each other the two or three pages taken with the teacher, or to read to themselves the next page.

As a variation to this, exercises are useful.

A [1]. These may take the form of puzzles previously prepared by the teacher from words on the page or pages just read. Examples of such puzzles for a 6-6½ year reading level are :—

I am white.
I can fly.
I go up in the sky.
I have a string on me.
What am I ?

I can lay an egg.
I can run.
I go " Cluck, cluck ! "
I have six chickens.
What am I ?

B [2]. A second interesting exercise is to give the pupils 10 or 12 long words from which they find the two little words, like this : teapot—tea and pot.

1. into
2. upon
3. away
4. cannot
5. forgot
6. forget
7. Sunday
8. inside

C. Groups of jumbled words representing very simple sentences on the page or pages read may also be used *sparingly*.

E.g. My kite I will fly.
My dog here is Nip.

D [3]. Yes-No Fun. Very easy questions involving the same vocabulary as the pages read are given to the class and they simply write " yes " or " no " in answer.

Can a rabbit run ?
Can a dog sit up ?
Do horses like eggs ?
Do ducks like a pond ?

[1] Taken from *Happy Venture Readers*, Book II, p. 51 (Oliver and Boyd Ltd.).
[2] *Ibid.*, p. 51.
[3] *Ibid.*, p. 50.

New stories may be preceded by dramatisation before reading them, while old stories may be conveniently dramatised by the group.

While Section B are doing exercises, the teacher turns to Section A and proceeds to receive answers to the questions on the blackboard. Here, again, the weakest readers of the A section are given an opportunity of reading orally under supervision—one pupil is asked to read the paragraph which explains the first question, another pupil is required to read the paragraph relating to question 2, and so on. In this way a certain amount of oral reading is taken with Section A.

Wherever possible, members of Section B should have a reading lesson morning and afternoon. These pupils will only learn to read by reading; they require plenty of practice, and it is more important that they should have extra reading instruction than that they should be worrying about Caractacus or the Crusades, the manufactures of Manchester or the meanderings of the Monsoons. These backward readers should not be deprived of enjoyable expressional activities such as singing, handwork, physical training and art, but should be given an extra reading period in place of some literature, English, geography or history lessons. *The backward reader will only make progress in English when he can read.*

Group Reading

A variation from sectional reading that ensures maximum reading practice for all members of the class is group reading. The pupils in the class are formed into five or six groups. In Group 1 are placed the four most backward readers (here reading test results help); the next group, Group 2, includes four or five pupils whose reading ages are somewhat higher than those in Group 1. Thus, the class is finally formed into five or six groups such that the pupils in each group are of about the same reading attainments. A good reader is placed in charge of each group, which

is given reading material appropriate to its reading level. For the lower groups the cheap graded supplementary readers [1] of about twelve or sixteen pages in length are very useful. These can be bought in sets of six and groups can keep records of the books read. It must be emphasised that for a successful reading programme in junior classes there is need for a plentiful supply of graded reading material to suit the wide range of reading ability in the classes.

In group reading the teacher should go from group to group, supervising and giving advice to leaders. The selection of good leaders is essential. The value of the method lies in the amount of supervised reading done by the pupils with material appropriate to their needs. Some members may read as many as five times during a lesson.

Suitable Reading Material for Different Reading Age Levels of Backward Readers in the Junior School

Suitability of material is an important aspect of the reading programme. While simple in vocabulary, the texts should have a certain appeal to backward readers. Samples for the different levels are given below :

Reading Ages 5-5½ *years*

Happy Venture Reading Cards. Introductory Book and Book I (Oliver and Boyd Ltd.).
Children's Hour Readers, First Series (Oliver and Boyd Ltd.).
Beginning Days (Macmillan).
Now We Go Again (Macmillan).
Off We Go (Macmillan).

Reading Ages 5½-6 *years*

Happy Venture Readers, Book II (Oliver and Boyd Ltd.).
Children's Hour Readers, Second Series (Oliver and Boyd Ltd.).
Peter and Peggy Play Work Book (Macmillan).
Jim and Judy (Macmillan).
The Surprise Box (Macmillan).

[1] See *Children's Hour Readers*, Series III and IV (3½d. each), and *Pleasure Readers*, Series A, B and C (Oliver and Boyd Ltd.).

Reading Ages 6-7 years

Happy Venture Readers, Book III (Oliver and Boyd Ltd.).
Children's Hour Readers, Third Series (Oliver and Boyd Ltd.).
Swing Along Readers (Oliver and Boyd Ltd.).
Round the Year (Macmillan).
London Dramatic Books, First Series (University of London Press).
Easy New Stories (Webster Publishing Co.).

Reading Ages 7-8 years

Happy Venture Readers, Book IV (Oliver and Boyd Ltd.).
Children's Hour Readers, Fourth Series (Oliver and Boyd Ltd.).
Friendly Stories (Macmillan).
New Everyday Classics, Book I (Macmillan).
Everyday Friends (Houghton Mifflin).
Joyful Reading (Webster Publishing Co.).
I Know a Story (Row Peterson & Co.).
It Happened One Day (Row Peterson & Co.).

It should be remembered that the above reading ages apply to backward readers of 7+ to 11 years.

Backward Readers in the Senior School

Backward readers in the senior school present perhaps the most difficult educational problem in the elementary school. Every year there are boys and girls of 11+ entering post-primary departments (senior schools, and non-selective central schools) who have reading ages of 8, 7 and even 6 years. Recently I found one non-selective central school, drawing on five different junior departments, where no less than 8 per cent. of the entrants had reading ages less than $7\frac{1}{2}$. What are the class teacher and head-teacher to do with these pupils of 11, 12 and 13 who clog these post-primary educational machines? One headmaster tries to solve the problem by sending the pupils back to the infant school for daily lessons—a procedure which may be correct in its estimate of the value of the junior schools which have sent him such children, but is surely very wrong from the point of view of its psychological influence on the child. Other head-teachers provide their staffs with some old phonic primers, about fat cats, red hens, a fox in a pen

and a hog in a bog, and advise them to " get down to a good old phonic method."

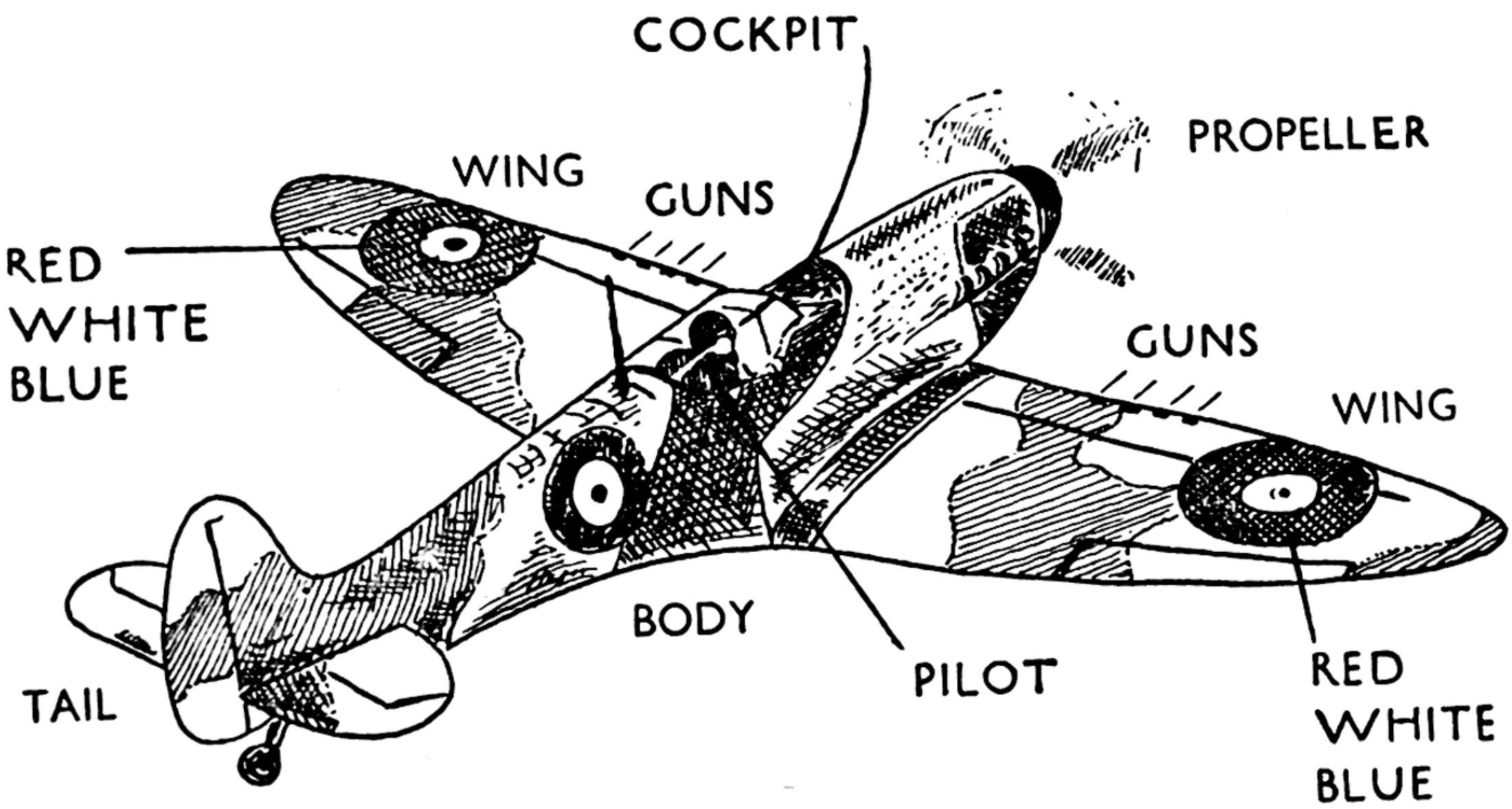
Rarely do either of these approaches succeed. What the pupil has failed in for the past five, six or seven years he fails in once more. The boy of 12 with the outlook and interests of a 12-year-old remains undisturbed by the reiterations of the teacher dealing with " the red hen is in a fix in the pen." The method and the material are distinctly distasteful to him, and the longer he drifts in this slough of apathy or despair, in a state of compensatory bravado or aggression, the more difficult is it to start him with material to which he could apply himself intelligently. He slowly forms the attitude with which one 13-year-old confronted me, namely, " What's the use of you trying now; I'm leaving in three months' time? "

The initial step with backward readers in the senior school is to make use of an approach that will immediately dispel the effects of accumulated failure so much advertised to parents, teachers and companions, and to restore the pupil's lost confidence. Hence, the method must be a new, attractive one that will revitalise their reading attitudes and produce immediate success. Here, again, the selection of strong interests—aeroplanes, animals, motor cars, motor cycles, etc.—is a sure starting-point. For example, one group of 11- and 12-year-old boys, interested in aeroplanes, began by suggesting names of different kinds of aeroplanes; then one type of plane was selected and its parts were named; a fairly large picture of an aeroplane was used for marking on the parts suggested by the boys. These names were learnt by a card method similar to that outlined earlier. When the boys had learnt sufficient words through picture association, they were encouraged to give sentences involving some of these words :

E.g. The aeroplane is a Spitfire.
It has two wings.
It has eight guns.
The aeroplane is a fighter.
It can fly very fast.

Pupils were allowed to dictate sentences which were copied down as nearly in the pupil's own words as grammar and structure would allow. These sentences were printed in a note-book for each pupil and learnt by "look-and-say" and "tracing-writing" methods. Further development was the learning of more words and dictating more sentences.

Revision was supplied by word matching and by dissecting the sentences into phrases and allowing the



pupils to place the phrases in their correct sentences. Then the pupils were encouraged to make up a book on their particular topics. Each child drew or pasted in pictures about his topic, and each drawing or picture was accompanied by at least one sentence. These books varied from five to fifteen pages according to the calibre of the child.

From this stage a very simple story relating to the topics was attempted. Use was made of pictures and a study of difficult words prepared the way for the pupils' reading of the material.

Use of short stories with short sentences and light vocabulary are essential at this juncture. Here, as with backward readers in the junior school, there should be flexibility of the time-table admitting of frequent lessons,

together with ample activity work associated with the reading lessons.

Again the lack of suitably arranged and graded material for backward readers in the senior school has held up remedial measures. Books with senior interests but with junior vocabulary and sentence structure are required. With backward readers between the ages of 11 and 15 years, the following have proved useful :

The Escalator Individual Reading Booklets, by W. U. Dalby and P. M. Bland (Oliver and Boyd Ltd.).

Beacon Readers, Books V and VI (Ginn & Co.).

Read, Laugh and Learn (short stories with an element of humour which appeal to these pupils) (Grant Educational Co.).

The Speedwell Book (a useful book for very poor readers ; worked out in a special school by Miss Hume and Miss Wheeler) (Cassell & Co.).

The New Foundation Readers, Books I and II (vocabulary of common words ; short sentences) (University of London Press)

Happy Venture Readers, Book IV (graded vocabulary ; everyday topics and stories) (Oliver and Boyd Ltd.).

The Pathfinder Books, by J. & P. Bradley (Oliver and Boyd Ltd.).

Pleasure Readers, Second and Third Series (Oliver and Boyd Ltd.).

The First and Second School Story Books, by H. Highfield (Nelson)

The New Vista Readers, by W. V. Warmington (Schofield & Sims).

La Bonte, White Hawk, X Bar Y Ranch (Ginn & Co.).

Adventures in Reading (6 short books of graded material) (Oxford University Press).

The Escalator Individual Reading Booklets are of special value with backward readers. They provide an excellently graded series of 30 small booklets arranged in 3 sections of 10 booklets each. They are short, well graded and deal with matters of interest to all backward readers (Junior and Senior) of reading ages 5 to 10. The careful grading of the booklets makes easy provision for individual instruction, and the systematic phonic work throughout enables pupils to gain that phonic knowledge which so many backward readers badly require at a later stage in their school work.

CHAPTER XI

ABILITY AND DISABILITY IN SILENT READING

Aims in Silent Reading

In teaching reading in the elementary school, the main aims are to produce in the pupils proficiency in recognising words and in understanding what they mean. Along with accuracy in these two aspects of reading there is the indirect consideration of speed. Thus, the ultimate goal is speed and accuracy in word recognition, which are in themselves the major requisites for speed and accuracy in comprehension.

Obviously, in the early stages of reading instruction, considerable time is spent in building up extensive powers of word recognition. But emphasis on word patterns should not mean that the understanding of what is read becomes a minor objective ; on the contrary, a scientific reading programme should stimulate comprehension of what is conveyed by word, phrase, sentence and paragraph, along with actual word recognition. Unless this is done there is the possibility of producing normal standards of word recognition accompanied by low levels of comprehension—the pupil reads words but they mean little to him.

In all junior classes one finds varying degrees of this artificial word reading, yet there would be less danger of its arising if early reading material were suited, in difficulty, in meaning and in interest, to the age of the pupil. Sometimes it is not in the early stages of reading that methods decrease speed and extent of recognition and comprehension, but in later stages. The pupil has acquired efficiency in the fundamentals of word-analysis and synthesis, and requires frequent and extensive practice in recognising the common words and their derivatives in a variety of contexts.

Emphasis on oral reading (with its necessarily limited material) should give place to practice in silent reading with numerous selections of simple material.

It should be noted, however, that just as too much oral reading can impede the progress of some pupils, so too much silent reading can raise barriers to the advancement of others. The proportion of oral to silent reading must be suited to the reading attainments of the pupil. Although there will always be, in all classes, from 10 to 20 per cent. of pupils who require a disproportionate amount of oral reading and individual attention up to the age of nine or ten years, it is not too much to assume that, with normal pupils, reading lessons should include almost from the beginning simple questions, instructions and activities to stimulate comprehension. Reading material for normally intelligent pupils aged $6\frac{1}{2}$ to $7\frac{1}{2}$ years might well be followed by a simple question on its context, and by an instruction leading to drawing, painting or movement. With readers aged 8 to $8\frac{1}{2}$ years, at least half of their reading lessons should involve silent reading with self-testing or testing by other pupils or the teacher.

If the ultimate object of teaching pupils to read is to enable them to acquire information from the printed page as accurately and as rapidly as possible, then oral reading is only a means to an end. Yet there are too many instances where the means has become an end in itself; the mechanics of reading are supplanting the primary motives of reading, namely training in, and opportunity for, comprehension.

Reading must be made purposive. For the vast majority of scholars reading will enter, in varying degrees, into their everyday experiences of work and leisure. But the type of reading required may not be the same for all occasions. Many pupils will need to use somewhat different abilities in different situations. Sometimes the emphasis will be on accuracy of understanding; they will need to read very carefully certain material—perhaps instructions for using a powder or a paste, for filling in a form or taking a ticket—

all details will have to be noted if the correct result is to be obtained. At other times the emphasis will be on speed; they will have to read rapidly and select the pertinent points in a newspaper article, an advertisement [1] or a section of a book.

Preparation for these and similar situations should be the aim of the class teacher in reading lessons with pupils who have mastered the mechanics of reading.

Investigation shows that there are pupils, both in junior and in senior classes, just as backward in speed or accuracy of understanding as there are pupils backward in word recognition. Hence, a consideration of testing, methods of teaching, causes of backwardness and remedial measures in silent reading is of vital value to teachers in junior and senior classes.

Tests of Silent Reading

For the class teacher the main merits he must foster in silent reading are accuracy of understanding what is read, whether it be of specific points or of the material as a whole, and speed with which this comprehension can be accomplished. In most situations the former aspect of silent reading is the more important. It is certainly more valuable in most classroom activities. Naturally, however, there are situations into which a time factor enters and where a combination of maximum ability in speed and in accuracy gives the best result. A slow but accurate reader is more effective than a fast but inaccurate one, but on the other hand a pupil whose power of comprehension is both rapid and reliable has a distinct advantage. This is particularly the case in life situations and in many educational tests and examinations which are influenced by the requirements of such situations.

[1] For purposive reading of these kinds followed by exercises suitable for less able seniors, see Book III, *Direct English*, M. M. Lewis and A. H. Stewart (Ginn & Co., 1940).

Silent Reading Tests

For this aspect of the enquiry two silent reading tests were constructed and standardised on 1860 cases for the purpose of selecting pupils backward in one or both aspects of silent reading. Silent Reading Test A contained eighteen simple pieces of prose which provided adequate reading material for backward readers whose reading ages ranged from $6\frac{1}{2}$ to 11 years. Item 1 in the test was as follows :

> " I am a wild bird. My home is in a tree. I can fly high in the air. I can sing a song.
>
> " Where is the bird's home ? "

Item 18 was as follows :

> " Upon a mountain height, far from the sea,
> I found a shell,
> And to my listening ear the lovely thing
> Ever a song of ocean seemed to sing,
> Ever a tale of ocean seemed to tell.
>
> " Which seemed to sing a song,—the mountain, the shell or the ocean ? "

The various items[1] demanded somewhat different responses ; thus items like 1 required information on a specific point, while item 18 required a general interpretation of the material. In addition, some items involved interpretation *plus* instructions, for example :

Item 10 :

> " Long ago there lived on the sea coast of Japan a young man named Yaina, a kindly fellow and clever with his rod and line.
>
> " Write the word Yaina on your answer paper, and if you think he was a fisherman put a line under his name ; if you think he was not put a cross under his name."

[1] It should be remembered that success by guessing is practically eliminated by the number of possible answers to each item.

Other items demanded a simple application of the knowledge derived from the test item, thus :

Item 15 :

" If you are waiting on shore for a ship to come in, the first thing you see is the smoke, later the funnels and masts come in sight, and lastly the hull of the ship itself is seen.

" Suppose you were watching a ship leaving the land. Choose the word below that tells you the last thing you would see, and write it on your paper.

people, masts, smoke, funnel, hull."

Three measures were obtained for the test, namely, the number of items right in nine minutes, the number of items right in unlimited time, and the time taken to complete the whole test.[1]

The test proved suitable for younger pupils and for older backward readers who are still experiencing difficulty with word recognition. For older pupils having little difficulty with word recognition, a supplementary test to gauge powers of comprehension is required. Thus Silent Reading Test B was compiled from twenty pieces of prose which increased in difficulty. Accuracy in reading this material was shown in the same manner throughout, namely, by selecting one of five given words to make the best sense when inserted where a word had been omitted from the text. The test is illustrated by the following examples :

Item 3 :

" One day a poor fisherman was casting his net into the sea, hoping to catch some —— (A). As he pulled in his net, he saw in it a small glass bottle, but no fish. He picked up the —— (B) and looked at it. It was quite empty.

A.	wood	fruit	seaweed	fish	shells
B.	fish	rope	bottle	stick	shell."

[1] For a copy of the entire test see Appendix III. For instructions and norms see Appendix I, p. 513.

Item 19 :

"Cotton goods cannot be made in every place. For spinning and weaving cotton well there must be moist air, plenty of water and plenty of coal. If the air is dry, the cotton threads snap when they are tightly stretched. The south west winds which blow across Lancashire are moist or wet winds. They keep the air —— (A), so that —— (B) can be easily spun and —— (C).

A.	hot	dry	warm	moist	cool
B.	wool	plants	rope	clothes	cotton
C.	sold	woven	bought	coloured	worn."

Only one measure was obtained for the test—the number of words correctly selected to fill the spaces in fifteen minutes.[1] Results from this test give a reliable indication of the testee's ability to comprehend accurately material which is typical of his everyday reading situations. The reliability coefficient of the test is 0·92.

Relationship between the Silent Reading Test and a General Intelligence Test

To obtain an estimate of the relationship between silent reading ability and general intelligence as measured by an intelligence test, 210 pupils between the ages of 8 and 11 were given, in addition to the two silent reading tests, the Simplex Junior Intelligence Scale. The latter, for which the time limit is forty-five minutes, consists of 100 items involving word completion, following instructions, selecting opposites and synonyms, general knowledge, number series, analogies, and simple reasoning. Correlations were calculated between the intelligence quotients and four measures from the silent reading tests ; these are given on the following page in Table XVII.

It will be noticed that in all cases the four silent reading

[1] For a copy of the test see Appendix III. For instructions and norms see Appendix I, p. 513.

TABLE XVII

Correlations between I.Q.'s and Results in Silent Reading Tests A and B

Age.	No. of Cases.	TEST A.			TEST B.
		No. of Items correct in 9 minutes and I.Q.	No. of Items correct in Unlimited Time and I.Q.	Speed and I.Q.	No. of Items correct in 15 minutes.
8	50	0·81	0·79	0·83	0·86
9	57	0·67	0·58	0·61	0·77
10	63	0·80	0·59	0·73	0·77
11	40	0·72	0·44	0·71	0·76

measures correlate higher with the I.Q.'s of the eight-year-old group than with those of other groups.

There is, too, throughout the table a considerably higher correlation between I.Q. and silent reading test results when there is a time limit than when unlimited time is allowed for reading the material.

The actual time taken to complete Test A—this was accurately ascertained for each pupil by the use of a stop-watch—shows a significant correlation with I.Q.

On the whole the correlation ratios reveal that there is a high relationship between I.Q. and ability to comprehend, in a given time, material in silent reading tests, and between I.Q. and speed of silent reading. The pupil who is weak in silent reading will tend to do poorly in a verbal group test of general intelligence, and conversely those pupils who have low I.Q.'s do poorly in silent reading tests.

DISABILITY IN SILENT READING

Use of the silent reading tests in a number of schools revealed three distinct groups of backward readers; those who were

(*a*) fast but inaccurate,
(*b*) slow but accurate,
(*c*) both slow and inaccurate in what they read.

Typical figures for these three groups from a junior mixed school, of enrolment 320 pupils and situated in a neighbourhood of average social grade, are given in the table below :

TABLE XVIII

Numbers of Three Types of Backward Readers in a Junior School of 320 Pupils

Age in Years.	Types of Backwardness.					
	Fast but Inaccurate.		Slow but Accurate.		Slow and Inaccurate.	
	B.	G.	B.	G.	B.	G.
8	3	1	5	2	10	5
9	1	3	5	7	8	2
10	4	3	6	3	3	4
11	1	3	4	0	1	1
Totals . .	9	10	20	12	22	12

Results of seven-year-old pupils have been purposely excluded from the survey of backwardness in silent reading.

The table shows that amongst 320 pupils tested there was 6·3, 10·6 and 11·3 per cent. of backwardness in the three aspects of silent reading.

The total reading disability figures indicate that 8 to 10 pupils out of a class of 40 require some assistance either with speed and accuracy of word recognition, or with speed and accuracy in silent reading.

The difficulties of pupils who are both slow and inaccurate, *i.e.* whose deficiency is primarily one of word recognition, have already been discussed in earlier chapters. Succeeding sections will be concerned with groups (*a*) and (*b*), *i.e.* pupils whose reading is fast but inaccurate, or slow but accurate.

FAST BUT INACCURATE READERS

Although this section refers specifically to pupils who are fast readers but inaccurate in comprehending what they read, it is also intended that the material should refer

to all pupils who are proficient in word recognition but weak in comprehension.

The intelligence quotients of the fast but inaccurate readers ranged from 128 to 74, a fact which demonstrates that bright and dull pupils alike can attain a level of rapid word recognition without a corresponding level of comprehension. Detailed examination of the cases revealed six causal conditions which contributed towards impoverished understanding of what is read.

(1) *Carelessness in Perception of Small Words and Parts of Words, and a tendency to omit Words*

Oral reading tests showed that some of these fast readers made errors in small words and in parts of large words, while occasionally they omitted a word or even a line. Tests in word recognition revealed that their perception of words was rapid—they immediately reacted to most material—but not as accurate as it might have been. It was thus necessary to distinguish between pupils whose inability to understand what they read was in part due to mistakes in word recognition (although they were rapid readers) and those whose word recognition was excellent and hence whose weakness in comprehension was due to other causes.

Typical of the first-mentioned pupils was Donald W., aged $9\frac{6}{12}$, I.Q. 89. His errors, though not serious, were sufficient to prevent him from obtaining the exact meaning of the material read. In both silent and oral reading tests the time taken by him was equivalent in mental age to 10·4 years, but in word recognition his score dropped to 8·4 years, while in accuracy in silent reading his level was below that of a 7-year-old boy. In oral reading he exhibited errors such as "a" for "an"; "ate" for "at"; "who" for "whom"; "should" for "shook"; "see" for "seek."

Sentences such as "He quickly returns a stick to me," were read as "He quick runs sticks to me."

Throughout, his reading was characterised by clipping the ends of words, omitting small words, and by intelligent guessing. His errors produced a certain discontinuity and incoherence in what he read, so that his reproduction of ideas or understanding of specific points was always faulty.

(2) *Lack of Concentration*

Lack of concentration was a noticeable defect in the mental make-up of pupils who read quickly but without understanding. Their reading was punctuated by periods of word reading of an artificial, mechanical kind, and according to the number of times their attention wandered, so their grasp of the meaning of the piece suffered. Similarly, they made errors in mechanical arithmetic, but with the difference that one lapse of attention in arithmetic made the entire sum wrong, while in silent reading it simply meant that they missed the meaning of specific points.

Sometimes the weakness in concentration appeared to be an intrinsic part of the child's emotional equipment, as in the case of Brenda S., aged $11\frac{6}{12}$, who obtained a mental age for word recognition of 13·8 years, and who showed a pronounced ability in analysis and synthesis of word forms, but whose score for accuracy in understanding was only 10·5 years. Brenda exhibited in all her school work decided instability in concentration and a marked lack of persistence.

At other times the lack of concentration of such pupils was intimately associated with a temporary nervous condition of a choreic nature, with the effects of anæmia or general lack of energy.

(3) *Impoverished Cultural Background*

An impoverished cultural background means in some instances, particularly where there has been an initial difficulty in learning to read, an impoverished reading

vocabulary and a low level of general knowledge. Although a pupil may possess excellent powers of recognition, his ability to comprehend what he reads is also dependent upon his verbal background, for if this is poor he is handicapped in making full use of contextual clues.

Case studies of backward readers, involving estimates of related verbal subjects and information on home conditions, provided evidence on this point. We may cite the case of John C., aged $8\frac{6}{12}$, I.Q. 110, poor home circumstances, reading age for word recognition 9·2, but for comprehension 7·5. John was very good at arithmetic, but his general level in English was poor ; in composition his written work was below his mental age and his spelling was very weak. Both in construction and in punctuation he appears to have been little influenced, either by teaching or by contact with the printed page. His power of word recognition was above average, but his oral reading showed a weakness in speech and an inability to grasp ideas quickly, and so make his reading intelligible.

(4) *Quick Word Reading*

Some pupils develop a form of quick word reading. They read in words, not in phrases, and although this form of reading may not materially hold up their speed (as it so often does), it has an adverse influence upon comprehension.

For meaningful reading it is essential that material should be read in phrases [1] and conceived in thought units—there should be continuity from phrase to phrase and from sentence to sentence. Word reading tends to destroy this necessary continuity so that the reader is handicapped in understanding and in recalling the thought of the passages read. For example, one pupil aged $8\frac{7}{12}$, mental age for word recognition 8·6, read the oral test, " My Dog," in this way :

One/ day/ my dog/cut/ his/ leg/ on/ an/ open/ tin.

[1] See Chapter VI for additional information on this point.

She took little notice of the punctuation, and though her time for the entire test was normal, her comprehension of the three paragraphs was barely equal to that of a seven-year-old pupil.

(5) *Over-emphasis on Expression in Oral Reading*

In oral reading some pupils attend so sedulously to the expression with which they read the material that assimilation of the meaning of it is almost entirely neglected. For these pupils expression becomes an end in itself. In every instance questioning reveals that they have had little practice in directed silent reading.

A pronounced example of this artificial expression, with little accompanying comprehension, is provided by Phyllis J., aged $9\frac{1}{12}$. Phyllis read aloud the three paragraphs in the "My Dog" test in one and a half minutes (equivalent in mental age to 9·0); she made no errors, but could not answer a single question on it, although she had been previously asked to remember what she read as questions would be asked. Throughout, her tone was mechanical, her expression artificial, and her interpretation of punctuation faulty.

The failure of pupils such as Phyllis is evidence of the decreased value of oral reading when word recognition is so well developed, and evidence of the need for planned exercises in silent reading.

(6) *Imaginative, Highly-strung or Excitable Pupils*

Amongst my records of fast but inaccurate readers there are no less than 20·6 per cent. of pupils whose faulty comprehension of what they read can, in the main, be ascribed to their imaginative, highly-strung or excitable temperament. In all cases they were pupils of supernormal general intelligence whose actual reading vocabularies were distinctly good. The imaginative pupils, whether in silent or in oral reading, missed points because the ideas in the piece

being read brought up associated ideas which led their thoughts away from the meaning of the passage, although mechanical word reading continued parallel with these unrelated flights of imagination. In other words, their errors in silent reading were due to a mild, but normal, form of dissociation.

All pupils in this group read fast, but the highly-strung, excitable ones were extremely rapid. They gabbled the material aloud or rushed through it silently so that they assimilated only the barest general idea of its contents—all details and specific points were glossed over. One boy of $8\frac{6}{12}$, I.Q. 101, with a word recognition age of 9·5 and a speed of reading equivalent to 10 mental years, seldom gained a comprehension score better than 7 mental years. He, like others in the group, invented all answers to questions he did not know. Another representative of the group, aged 12, read large numbers of books at an amazing speed, but when questioned on a chapter he had just read, he could give little beyond a very general outline.[1] Reading was for him a kind of emotional stimulant rather than an intellectual activity.

Slow but Accurate Readers

Opposite in type to the pupils just discussed are the slow but accurate readers; these pupils differ from the fast but inaccurate readers mainly in habits. When a time limit is set for reading, the fast but inaccurate reader may read 85 per cent. of the material but only answer correctly 66 per cent. of the questions, while the slow but accurate reader only covers 60 per cent. of the passage in the time, but makes no errors in related questions, *i.e.* gets a 60 per cent. result with a 100 per cent. reliability. When, however, no time limit is set for selected passages there is a marked difference between the two groups quantitatively as well as qualitatively; the slow but accurate reader

[1] A characteristic almost as pronounced with informative prose as with prose of an exciting nature.

increases his score by 40, 50, or even 60 per cent. as against a 15 or 20 per cent. increase of fast but inaccurate readers. Accuracy, then, rather than speed, is the vital factor in silent reading.

The range of I.Q.'s amongst slow but accurate readers was from 117 to 80, so that weakness in speed, like weakness in comprehension, characterises all intellectual grades of pupils.

One striking difference between the two groups of readers is that, whereas only 38 per cent. of the fast but inaccurate readers had a mental age for word recognition below their chronological age, 64 per cent. of the slow but accurate readers failed to gain a word recognition age commensurate with their chronological age, a fact which suggests that slowness is more intimately connected with difficulties in word recognition than is weakness in comprehension. Examination of the group showed that slowness may arise, in part, from any one of five different conditions.

(1) *Over-emphasis of Phonic Analysis of Words*

Over-emphasis of phonic analysis of words is one of the most outstanding causes of slowness in reading. Excessive auditory analysis amongst 8, 9 and even 10-year-old pupils may be due to two different factors. It may arise from undue emphasis on sounding words and on word drills in the initial stages of teaching reading, so that the pupils regard sounding and going slowly as virtues in themselves. When they should have built up habits of rapid word recognition they still persist in a predominantly analytic approach of an auditory kind. Sometimes the sounding and resulting slowness may not be a habit, but a necessity—the pupil is weak in visual discrimination of word patterns and needs additional impressions through auditory analysis to help him recognise the words. This was the case with Lillian P., aged $9\frac{11}{12}$, I.Q. 98, who took 25 minutes to complete Silent Reading Test A, when the average time for a pupil of her age is 12 minutes. In the 9 minutes allotted

for the test she obtained a score of only 7, but with unlimited time she made a score of 17 out of a possible 18.

Occasionally over-reliance on phonic analysis was neither a habit nor a necessity, but a manifestation of a personality defect—it indicated excessive timidity, lack of independence, or lack of initiative. The pupil both consciously and unconsciously refused to dispense with the prop of continued phonic analysis and made insufficient use of recognition through visual pattern and contextual setting.

(2) *Early Difficulties in Learning to Read*

Amongst the slow but accurate readers were a disproportionate number of pupils who had been slow in learning to read, and the early weakness, together with the resulting loss in confidence, had produced a cautiousness which slowed up considerably their rate of reading.

Somewhat similar to these were pupils whose general temperamental reaction was one of caution. An interesting example of this was Willie C., age $9\frac{10}{12}$, who had a pronounced stammer with accompanying reflex movements which were in part due to malnutrition. Willie, a very likeable lad, somewhat pre-occupied at times, had a wonderful fund of general knowledge garnered mainly through his favourite activity of reading. In oral tests he revealed a word recognition age of 12·0 ; in silent reading tests his time scores were equivalent in mental age to 8·5 years, for the number of questions correct in limited time 9·2 years, and in unlimited time 12 years.

(3) *Narrow Eye-Voice Span or Eye-Perception Span*

Slow readers often show in oral reading a small eye-voice span, that is, their eye is but little in advance of the word they are saying, while in fluent readers it is two or even three words ahead of the word being articulated. Similarly, in silent reading the span of perception is limited to the word actually being recognised, with exceedingly

little partial perception in the marginal field, and the result is that the reader, deprived of these additional recognition cues—partial recognition and meaning through phrases—takes longer over recognition each time he passes on to single words.[1]

A limited perceptual span may arise through pronounced perceptual deficiencies, but often it is due to over-emphasis of word drills and phonic elements, to the use of too difficult reading material, and to insufficient attention to contextual aids in teaching reading.

A narrow eye-voice span or span of perception may be increased by appropriate remedial exercises.

(4) *Excessive Overt Movements in Reading which become Habits*

Although such devices as the undue articulation of words and the use of the finger in keeping the place are useful in teaching children to read and in helping older backward pupils, they should not be allowed to become habits which slow up normal rates of speed and recognition.

(5) *Slow Mental Reactions*

Detailed examination of the slow but accurate readers made it clear that slowness may be due to temperamental and not to intellectual conditions. No less than 15·6 of this group of pupils were extremely slow, but nevertheless accurate, in their mental reactions. They thought slowly, they read slowly, they calculated slowly, they wrote slowly and they moved slowly, and no measure, whether it was censure, remedial exercises or direct assistance, made them change for long their natural pace. It was significant that several members of the group were fat and sluggish in appearance and somewhat apathetic in emotional expression.

[1] See for additional explanatory material on this, Chapter VIII.

Summary

Causes of Weakness in Silent Reading

A. *Fast but Inaccurate Readers.*

(1) Carelessness in perception of small words and parts of words, and a tendency to omit words.
(2) Lack of concentration.
(3) Impoverished cultural background.
(4) Quick word reading.
(5) Over-emphasis on expression in oral reading.
(6) Imaginative, highly strung, excitable temperament.

B. *Slow but Accurate Readers.*

(1) Over-emphasis of phonic analysis of words.
(2) Early difficulties in learning to read.
(3) Narrow eye-voice span or eye-perception span.
(4) Excessive overt movements in reading.
(5) Slow mental reactions.

Speed in Reading

Finally, it will be of practical value to review briefly, in a general way, the question of speed in reading. Speed of reading differs considerably for all individuals according to

(*a*) the material being read,
(*b*) the purpose of the reading.

Speed is naturally dependent upon difficulty of the reading material, so that if we are to develop correct reading habits, books should be suited to the reading attainments of the pupils. Research results show that extensive reading practice with simple material is the most useful means of increasing speed of reading. Furthermore, pupils should not be hurried when careful reading to understand a problem, method, or a particular point is required, for the wide variations in individual rates make it impossible to establish any standard rate. The range of words read silently by

pupils of different age-groups, using material appropriate to each age, is as follows :

Age	7	. .	18 to 240	words	a	minute.
,,	8	. .	24 ,, 330	,,	,,	,,
,,	9	. .	30 ,, 360	,,	,,	,,
,,	10	. .	35 ,, 402	,,	,,	,,
,,	11	. .	40 ,, 432	,,	,,	,,
,,	12	. .	48 ,, 460	,,	,,	,,

The figures show that within the same age-group there are children who can read 8, 9, and even 10 times as fast as others—a fact which clearly indicates the need for sectional work in reading.

Relationship between Speed and Comprehension

Previous sections have dealt with pupils who are fast but inaccurate or slow but accurate in silent reading, and in conclusion we may well consider what is the exact relationship between speed and comprehension.

Correlation ratios, derived from the use of the two silent reading tests described at the opening of the chapter, range in the various age-groups from 0·35 to 0·62 ; that is to say, in careful reading there is a positive relationship between speed and accuracy of comprehension, but it is by no means absolute. There are many cases of fast reading accompanied by poor comprehension and vice-versa. The ratios suggest that the premier emphasis should be on accuracy irrespective of speed, that speed should not be encouraged at the expense of accuracy, and that slowness need not be considered a handicap except when it seriously interferes with amount read and degree of understanding achieved. The teaching of silent reading should be primarily directed towards assisting the pupil to understand what he reads in a variety of settings.

Exercises for Improving Extreme Slowness in Reading

The following exercises are of practical value in improving the speed of very slow readers who have

attained a satisfactory standard of word recognition. In these exercises and in those outlined for improving comprehension it is sometimes necessary to prepare the material beforehand, so that a simple duplicator is particularly helpful. Such prepared material, which is soon accumulated if sets are prepared regularly, is always useful for other groups of pupils. Furthermore, if the teaching of reading is to be really effective, it is essential to make full use of supplementary devices.

Exercise 1

Flash Cards

Flash cards, if used correctly, are an excellent aid for teaching reading, but if used without set purpose they produce little real improvement. The best results are obtained when paragraphs are taken from the pupils' reading books and printed in units of perception, *i.e.* two or three words at a time, on cardboard strips 20 to 24 inches long and in letters 3 inches high. For example, the following material would be printed in phrases as indicated by the marks :

> Bombo/ the elephant/ lived in India./ He worked hard/ all day/ in a timber yard./ He was almost/ eighty years old./

Each card is flashed in turn before the group of weak readers for a few seconds—not long enough for any word analysis but sufficiently long to allow recognition of word wholes. Repetition is given so that every pupil finally reads the phrase. Pupils are then required to read paragraphs, so treated, in their class reading books. This exercise, which is designed to aid quick word recognition and to widen span of perception, yields marked results if used consistently and if supplemented with the use of plenty of easy supplementary reading books.

Exercise 2

A variation of flash cards is an exercise which can be graded in difficulty according to the age of the children. Thus, for young pupils the cards would make use of statements such as :

" Open the window."

" Bring the chalk."

Individual or team responses may be taken. For older backward pupils the statements may be increased in difficulty.

" Draw a square on your paper and divide it into four small squares."

Exercise 3

Question Cards

Cards of twenty or thirty questions, a set for each pupil, can be prepared and distributed to the class. Different sets of questions—12 to 15 in a set—centred round different topics may be used. Examples of the type of question for the various sets are as follows :

Set 1. " Where do you live ?
How old are you ?
What street do you live in ? "

Set 2. " Write the name of a fish.
Write the name of a bird.
Write the name of a girl."

Set 3. " Where do we buy meat ?
Where do we buy bread ?
Where do we buy coal ? "

A time limit is set and marks are given for each question correctly answered. The exercise combines both speed and accuracy of comprehension.

Another form of this device is obtained by preparing cards with answers to 50 or 60 questions which are printed on flash cards. Each pupil has a number of correct answers and a number of incorrect ones. The teacher shows the card for a few seconds and pupils who have the answers to it hold up their answer cards. One mark is given for each correct answer card shown.

Exercise 4

Missing Words

Paragraphs, from which words are missing, are prepared from the class reading books and the pupils are required to read quickly through the passages in their books, writing down the missing words.

Exercise 5

Timed Reading

Timed reading of simple material may be given, but passages must be sufficiently easy to facilitate quick reading in phrases. The amount read may be tested by simple questions, but if these show any decrease in accuracy of comprehension still simpler material should be employed.

The small twopenny and threepenny supplementary readers published by some firms are admirable for this purpose, particularly when they have been graded in sets of increasing difficulty.[1]

Exercise 6

Finding Phrases

A number of phrases from a story not previously read are written on the blackboard. Pupils are required to read the story and write from their reading material the phrases which precede those on the blackboard.

[1] See *The Children's Hour Readers* (Oliver and Boyd Ltd.). Grades A, B, C, D for normal reading ages: 6-6½ (A), 6½-7 (B), 7+ (C and D); Grades C and D are suitable for backward juniors aged 8 to 9+.

Exercises for Improving Comprehension

With pupils in junior classes numerous activity exercises can be used to develop comprehension; these include questions leading to drawing, colouring, cutting and such exercises.

Exercise 1

Pupils are asked to read a poem, or one or two pages of a story, and to illustrate an incident or a character therein. According to the amount of detail the pupil assimilates during his reading, so he is provided with material for the illustration.

Exercise 2

Completion of Sentences

The pupils are provided with sets of sentences which they complete by an illustration in the place of the missing word.

E.g. 1. We have a dog and a cat. They sleep together in a ——.

2. The fishermen went down to the sea to get their ——.

Exercise 3

Following Instructions

Printed sets of instructions are given to the pupils and they have to follow these in the construction of a picture or a series of pictures which make a short story.

E.g. (*a*) Draw a haystack.
Put a boy in the picture on the top of the haystack.
Draw a ladder leaning against the haystack.
Draw another boy climbing the ladder.
Put a dog in the picture.

(*b*) Picture 1. Draw a pig in a sty in a farmyard.
Draw a fox outside the sty.

Picture 2. Draw the pig and the fox going out of the gate of the farmyard.
Draw the sty with the door open.

Picture 3. Draw the pig and the fox out in the woods.

Picture 4. Draw the pig waiting near a hole.
Draw the fox talking to the young foxes.

Picture 5. Draw the pig running along a path in the wood.
Draw the foxes chasing him.
Draw the farmer coming along the path with his gun.

Exercise 4

Missing Words

Varied sets of sentences from which words are missing, and envelopes containing pictures representing the missing words are prepared. Each pupil completes a set of sentences, after which they are checked by the teacher and he changes envelopes with another pupil. Words on cards instead of pictures may be used.

Exercise 5

Families

Six or seven sentences relating to a particular topic are printed on separate strips of cardboard which can be enclosed in a large envelope. Seven or eight topics are selected and the requisite number of sentences on each are included in the one envelope. Samples of the topics and sentences for junior pupils are given below :

Topic 1. *Flowers.*
The daisies are like little stars.
The daisies close up at night.

Some flowers do not like cold weather.
We grew some bulbs in a pot.
I should like to work in a florist's shop.
The bees like to visit the flowers.
I like to grow all kinds of plants in my garden.

Topic 2. Fishing.

Some fish are big, others are small.
Fishermen have to be good sailors.
Plaice and sole are flat, but cod and whiting are round.
I should like to go out at night on a boat and help with the fishing nets.
Some fish are caught in nets, others are caught on lines.
In the summer fish are cheap, but in winter fish are dear.
In winter if it is very stormy the fishing boats must stay in the harbour.

As the sentences on the strips of cardboard are jumbled within the envelope the pupils are required to sort them into groups according to the topics.

Exercise 6

Question Cards

Reproduction of a story, a lesson or a chapter in a text-book by question slips is an interesting method of encouraging quick silent reading and of teaching sequence in English work. Question cards are previously prepared on material which is to be read silently by the class. The questions are so selected that they form a complete revision of the general ideas contained in the reading material. Ten to twenty pupils, according to the length of the answers involved, are given printed questions and each is required to give the answer to his particular question as it arises in its correct sequence in the oral reproduction.

Exercise 7

Illustrating Compositions

A novel but useful exercise for older pupils is to allow them to write compositions on self-chosen topics of a descriptive type and then to distribute the papers so that each pupil has someone else's composition to illustrate. The illustrator must carefully read the composition, noting the details, and in so doing he is made aware of the need for clarity, sequence and interesting descriptive material in written work—points that are further emphasised when illustrator and writer discuss drawing and composition respectively.

Exercise 8

Riddles

Most pupils enjoy riddles. Riddles for silent reading can be prepared in sets and varied in difficulty according to the reading attainments of the children. If 30 envelopes, each containing 9 or 10 riddles, are constructed, they provide an amount of easily handled silent reading material sufficient for many weeks. Examples of easy and more difficult forms of riddles are given below :

I am bright.
I have a handle.
I have three sharp points.
I am used at meals.
What am I ? (*A fork.*)

I am black.
I am white.
I am folded.
I arrive each morning.
I am read by many people.
What am I ? (*A newspaper.*)

People use me.
I cannot be seen.
I make heat and light.
I am conducted along wires.
What am I? (*Electricity*.)

Exercise 9

Varied Questions

All forms of questions can be set on material selected for silent reading—the greater the variety the more strongly will the reading be motivated. Sometimes pupils may be required to write five or six lines on the general ideas contained in a passage; at other times specific points should be asked for, or provision should be made for direct application of the information derived from the silent reading. Occasionally it is useful to place on the blackboard, before silent reading commences, a number of significant questions which will assist pupils to read with a purpose and to pay attention to important parts of the material.

Exercise 10

One Word Answers

Questions requiring one word answers form easily corrected silent reading exercises. They are more useful if related to material just read or information just discussed in an oral lesson. For weak readers in junior and senior classes cyclostyled copies of question lists can easily be prepared, care being taken to introduce words suitable to the development of the children's reading vocabulary. In correcting the questions, reasons where necessary can be quickly elicited from individual pupils.

Exercise 11

Graded Instruction Cards

Instead of giving oral instructions for a handwork or a practical arithmetic lesson, write on the blackboard all necessary information, making the steps numerous and simple. No explanation of steps is attempted, and apart from individual supervision of completed steps, the pupils are required to carry through the lessons entirely from the written instructions. An occasional use of this method is an effective antidote to the constant spoon-feeding methods that are too frequently used in many classrooms, with the result that when pupils are faced with a few written instructions they either carry them out incorrectly or immediately seek assistance with them.

Exercise 12

Dissected Paragraphs

An exercise to stimulate meaningful reading amongst junior pupils is that in which sentences from an easy paragraph are printed on separate cards and placed in an envelope. Each pupil has an envelope and he is asked to place his set of sentences in their correct sequence. It is advisable to use simple material and to see that no ambiguous interpretations are possible.

Exercise 13

Pairing Stories and Pictures

Sets of five or six cards with a short story on each card are prepared, and appropriate pictures illustrating the material are selected. Pupils are required to match the printed material with the pictures, all of which are numbered. Two pupils can use one set of cards, so that 20 sets of cards and pictures provide silent reading material for several weeks.

A variation of this exercise is the pairing of stories or paragraphs on general topics with appropriate headings printed on separate cards.

Exercise 14

Pairing Sentences of Similar Meaning

Two sets of 10, 15 or 20 sentences are written on the blackboard, and in one set each sentence is similar in meaning to another sentence in the second set. Pupils are asked to pair the sentences which are similar in meaning. Examples from an easy set illustrate the nature of the exercise.

Set 1

(1) The boy was not able to enter his father's shop.
(2) The man lived a lonely life in a small house on the hillside.
(3) The fire soon caught the whole building and within a short time the sky was quite red with flames and flying sparks.
(4) In and out, round about the river we went, looking in every nook and corner for the lost boat.
(5) It is not very wise to count your chickens before they are hatched.

Set 2

(1) Every one was ready to help in the search for the missing boat.
(2) One day a fox stopped before a pen of ducks in a farmyard. There was a hole in the pen and so the fox thought, "All these ducks will be mine. I shall take four now and give two to my brother . . ." Just then the farmer appeared with a gun and the fox had to run for his life.
(3) High up on the mountain slopes the man had chosen to make his home.

(4) As I drove back from the country I could see a red glow in the sky, and I knew that it was made by the flames of some large building on fire.
(5) The door of the shop was closed and he could not make his father hear.

Naturally, for older pupils [1] the sentences can be made both longer and more difficult.

[1] Some excellent suggestions for linking motivated silent reading with practical activities are to be found in J. Duncan's book, *The Education of the Ordinary Child* (Nelson).

CHAPTER XII

SPELLING ABILITY

Factors Influencing Spelling Ability

1. *The Spelling Process*

Spelling is a complex sensory motor process the efficiency of which is based on repeated motor reactions to sensory stimuli. Perceptual impressions, auditory and visual, must fuse with motor responses, articulatory and graphic, to ensure mastery over words. Not always is the stimulus peripheral; it may be a central one arising through imagery or in other instances through the meaning of the word as it takes its place in the stream of thought.

The average child of unimpaired sense equipment learns a new word by an analytic-synthetic procedure. The word is first perceived as a whole, the characteristic points in its schema or configuration being noted. Then it is split up into spelling units, *i.e.* syllables. At the same time the latter are linked with their correct sounds by saying them so that auditory-articulatory association is formed. The parts are related to the whole by additional eye movements covering the entire word.[1]

For some children this repetition of breaking down and building up proceeds almost unconsciously; for others it must be made a conscious activity. With young pupils and backward pupils the casual experience of words in reading lessons is insufficient for recording permanent impressions of them. In the case of such children characteristic phonic families, irregular sound values and peculiarities of visual form must all be attentively experienced.

For all pupils the visual, auditory and articulatory

[1] As familiarity with words increases, a schema or *gestalt* of the whole words, without analysis or synthesis, probably occurs subconsciously.

elements in words are firmly cemented by writing. The grapho-motor act is essential, for it affords a considerable aid to visualisation, assists the focussing of attention and helps to bridge the gap between visual and auditory symbols by successive production of the constituent parts of the visual form. Some teachers underrate the value of grapho-movement imagery and tend to regard the process as purely one of accurate or inaccurate visualisation. The child must write the word several times to get the " feel " of it. This is a factor of vital importance in spelling.

With increasing maturity and as a result of frequently hearing, seeing and saying words, their visual, auditory and articulatory elements gradually fade into the background as conscious factors in their recall. The single activity of writing these words is then sufficient to ensure their correct reproduction. We do not remember how to spell " while " or " coming " ; such words flow, as it were, from the end of our pen as we think of phrases and sentences. They have become engram complexes dependent for their stimuli upon dozens of muscles which have been co-ordinated with definite strength, sequence, accuracy and rapidity. Thus, if one writes " coming," the initial letter causes a muscular contraction which is the stimulus for the second of this chain-like series, namely " o " ; then automatically one runs on to " m " and so on with " ing."

This machine-like movement does not, of course, characterise one's spelling of all words. With some words the stream of letters has not become entirely automatic, and a slight hitch, only the slightest, occurs when we are writing. It is then that we rely upon perceptual and motor memory images that were once prominent in consciousness. Exactly which memory image we call up to supplement the grapho-motor depends, in varying degrees, on three things—on the form of imagery most frequently used in spelling, on the way in which the word was originally learnt, and on the nature of the word. Some individuals call in visual imagery to help them ; when in doubt they write the word to see how the proposed form compares with the hazy

schema that they have in mind. Then they add, omit, or transpose letters accordingly. Others gain most assistance from auditory imagery ; probably the sounds of the various syllables aid in recalling their visual forms. Thus with unusual or difficult words, supplementary imagery of different kinds is employed ; words like " fuchsia " or " Czecho-Slovakia " demand additional attention to visual aspects, while long words such as " inconvenienced " or " statistician " require to be said to be correctly spelled, and with forms like " hæmorrhage " several imaginal aids may be invoked.

This brief analysis of the spelling process indicates the absolute necessity of emphasising with backward spellers all means of ingress in learning words—the visual, the auditory and the kinæsthetic.

2. *The Relationship of Chronological Age, General Intelligence and Educational Attainments to Spelling Ability*

An estimate of this relationship was derived from two experiments. In the first, 100 girls, aged 9 to 14, from a small school where individual attention and coaching was common and where the unused margin of intelligence was at a minimum, were given a verbal group test of general intelligence, spelling tests and standardised tests in arithmetic and English. The observed and partial correlations calculated from these results are given in Table XIX.

Apart from the preponderant verbal factor in spelling, educational attainments and the verbal group test of general intelligence, these results would suggest that spelling ability is more dependent upon the specific factors which contribute towards success in school attainments than upon either general intelligence or chronological age. But as Professor Burt has pointed out to me, " it is difficult to label precisely the factors underlying school attainments." They might be primarily due to school experience, but might also be due to interest and to special aptitudes.

Evidence which indicates that school experience has a preponderating influence upon spelling achievement is found in Gordon's research.[1] Testing gypsies, who make 35 per cent. school attendance, and canal boat children, who make 5 per cent. attendance (compared with the 88 per cent. of normal elementary school children), he found that of all school subjects they were most backward in spelling.

TABLE XIX

Correlation Ratios showing Relationship of Spelling to Age, Intelligence and Educational Attainments

Factors Correlated.	Observed Correlation.	Factor Eliminated.	Partial Correlation.
Age and spelling . . .	0·48	Intelligence Attainments	—0·05 —0·23
Spelling and intelligence . .	0·81	Attainments Age	0·32 0·79
Spelling and educational attainments	0·83	Intelligence Age	0·43 0·78

This and the earlier figures are of vital significance with regard to early verbal experiences of children (particularly continuity of teaching in reading and spelling).

3. *The Influence of Foreign Parentage, Foreign Language in the Home, and Bilingualism on Spelling Ability*

Does a child born of foreign parents, even where the latter speak little English, experience difficulty with English spelling?

When parents speak a foreign language and encourage their children to learn it, does this influence the children's ability to spell in English?

If a child is bilingual, or practically so, does he tend to spell poorly in English?

[1] H. Gordon, *Mental and Scholastic Tests among Retarded Children* (Board of Education Pamphlets, No. 44, 1923).

These three questions arose during the investigation into disability in spelling, and provisional answers to them, so far as they concern London elementary school children, were obtained from experiments with four groups of children, namely,

(*a*) Anglo-Orientals.
(*b*) Jews.
(*c*) Italians.
(*d*) Pupils of the École Protestante Française de Londres.

A short summary is first given of observations and results gleaned from each group. Finally, the three minor problems under consideration are examined in the light of combined conclusions from all four sources.

(*a*) *Anglo-Chinese and other Anglo-Orientals*

Ten school departments took part in this aspect of the research. Four of them contained between 2 and 5 per cent. Anglo-Orientals, while in two of them such children formed 15 per cent. of the pupils. Very few of the children were pure blooded; only three families, West Indians, had the same nationality on paternal and maternal sides. Most had English mothers and coloured fathers. Eighty-five per cent. of them were Chinese and 15 per cent. negro, West Indian, Cingalese, Malay or Indian. All the children, 95 in number, were born in London. In some cases broken English was spoken in the home, but the children only heard another language when friends of the father visited home. Only three boys had assimilated the merest smattering of Chinese.

To all members of this group spelling and reading tests were given. In a control group of English children only spelling was tested. As the number of testees was small the marks of boys and girls have been combined to lessen eccentric fluctuations in age-group scores. Results are recorded, in terms of spelling and reading ages, in Table XX.

TABLE XX

Spelling and Reading Ages of Anglo-Oriental and English Children

Chronological Age.	Anglo-Orientals.			Controls (English).	
	No. of Cases.	Spelling Age.	Reading Age.	No. of Cases.	Spelling Age.
7	9	7·9	8·2	27	7·1
8	18	8·4	8·4	42	7·9
9	17	9·7	9·8	43	9·0
10	18	11·3	11·2	54	10·1
11	15	11·3	11·4	46	10·6
12	10	11·8	11·8	44	11·3
13	9	12·0	12·1	49	12·0

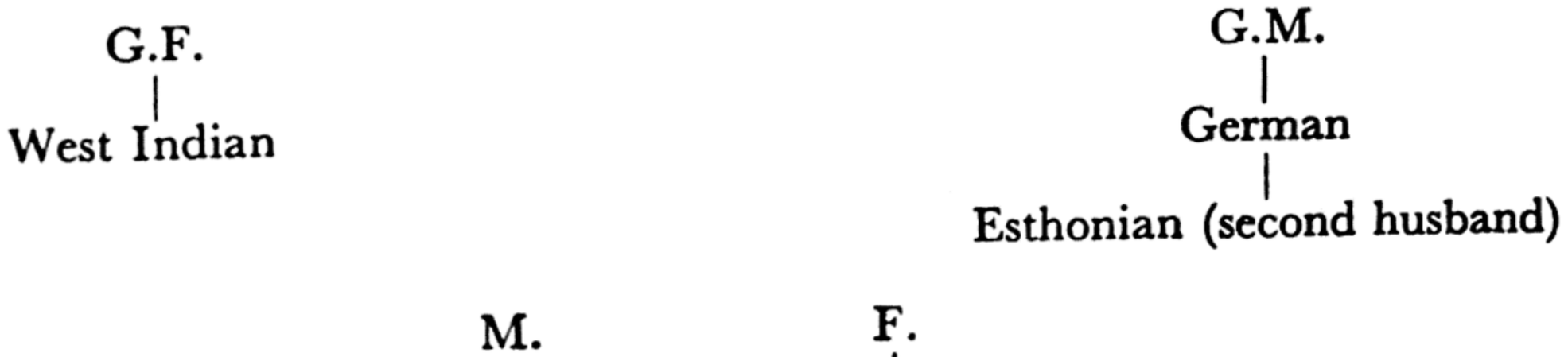
Four of these differences are statistically significant. The scores indicate (keeping in mind the small number of cases) :

(*a*) that no detrimental influence on spelling is found amongst the English-born children of Anglo-Chinese and Anglo-Oriental families [1] ;

(*b*) the spelling achievements of Anglo-Orientals are slightly higher than that of the controls.

A feature obscured by the massed results is that the Anglo-Indian children were inferior in reading, spelling and composition to Anglo-Chinese children, and, in most

[1] That a wholesome mixture of nationalities and the presence of foreign speech need not have any effect on reading and spelling attainments is shown in the case of Doreen W. (chron. age $11\frac{3}{12}$, spelling age $10\frac{7}{12}$, reading age 11).



The grandmother and grandfather lived in the same home as Doreen, who was taught German by her grandmother.

cases, below the corresponding age levels of English scholars of the same neighbourhood.[1]

The scores of a purely Anglo-Chinese group would have been slightly higher than those shown in the table.

Two separate issues seemed to contribute towards the scholastic superiority [2] of Anglo-Chinese children. First, their home conditions were often better than those of most Limehouse children of English parentage. Although the Chinaman may depart from his native land, he apparently does not depart from the corner-stone of his Confucian creed, namely, unity of family life. Second, a point having particular significance with respect to spelling was the very low percentage of eye defects amongst Anglo-Oriental children. Only one of the 95 wore glasses.

(*b*) *Jewish Children*

An opportunity of gauging the effect of foreign language on orthographic accuracy in English was afforded by tests carried out amongst Jewish children, some of whom spoke Yiddish and many of whom learnt Hebrew. A school composed entirely of Jewish boys was selected for the experiment. Cases upon which the influence of foreign language and foreign parentage exerted a maximum force were separated from those upon which these factors exerted little force. This was facilitated by using the following classification, the categories of which were not mutually exclusive [3] :—

[1] In stock, both maternal and paternal, the Anglo-Negroid, Anglo-Malay, etc., are at times inferior, while there is in general a low standard of family life, morally and economically. The cases are, however, too few in number to make any generalisations from the results. Nevertheless, interesting evidence of a supplementary nature is to be found in a recent study.

See M. E. Fletcher, *Report on an Investigation into the Colour Problem in Liverpool and other Ports*, issued by the Liverpool Association for the Welfare of Half-Caste Children, 1930.

[2] In one school three Anglo-Chinese girls of different ages, and from the same family, were the cleverest scholars in their respective classes, while in spelling tests, cases such as I. Lum, C.A. $10\frac{8}{12}$, S.A. 13·3; R. Lin Sang, C.A. $11\frac{4}{12}$, S.A. 12·5, were not uncommon.

[3] I am indebted to the Headmaster of Stepney Jewish School for assistance with particulars of the classification.

Y. Boys frequently conversing in Yiddish with parents.
Y.E. Boys replying in English to Yiddish conversation of parents.
N.E. Boys whose parent(s) speak(s) little or no English.
B.E. Boys whose parents are both English.
B.F. Boys whose parents are both foreign.
O.E. Boys, one of whose parents is English.
C. Boys attending Cheder two or more evenings per week.

A comparison of the average spelling ages of Y. or Y.E. +B.F. (occasionally +C) with those boys for whom home language influences were almost entirely English, did not yield any significant differences. In some age-groups there was a small advantage in favour of the former. In others a slight superiority marked the scores of the latter children. All divergences were probably due to scanty sampling. An examination of individual papers of boys who were of normal or supernormal intelligence revealed only ten cases where poor achievements in spelling might have been attributed to the combined influence of speaking Yiddish, their foreign parentage and attendance at Hebrew classes. On the other hand, there was a far larger number of pupils, submitted to the same influences, whose spelling age was considerably above their chronological age.

An interesting supplement to the above experiment was the testing of all Jews in a school of 300 boys, ages 6 to 14, and a comparison of results with a non-Jewish school of similar social status. At all ages except one, 14 years, the Jews maintained in spelling an advantage of almost half a year over non-Jews.[1]

(c) *Italian Children*

In and around Soho one finds numerous Italians who gain a livelihood as waiters, cooks and keepers of cafés.

[1] Supplementary evidence on this point is to be found in "Intellectual Differences between Jewish and Non-Jewish Children" by A. G. Hughes (Ph.D. Thesis in the University of London). Hughes found, from giving standardised tests in general intelligence, arithmetic and English to Jewish and non-Jewish children, that the former exhibited a superiority varying from $\frac{1}{3}$ to $\frac{3}{4}$ mental year in these three measures.

Their children attending schools in the neighbourhood were selected as subjects for an additional study of the influence of a foreign language upon spelling ability. All these pupils were given spelling tests and then interviewed on these points :

(*a*) Nationality of parents.
(*b*) Parents' ability to speak English.
(*c*) Language spoken at home by parents.
(*d*) Language spoken at home by child.
(*e*) Birthplace of the child.
(*f*) Number of years resident in England.
(*g*) Any return to his native country. If so, for how long ?
(*h*) Comprehension of another language even if he does not speak it ?
(*i*) Existence of any brothers or sisters. In what language did he converse with them ?

Briefly, the children's replies showed :

(1) Ninety-five per cent. of the pupils tested were of Italian parents. The remaining 5 per cent. had Italian fathers and Irish, English or Belgian mothers.
(2) Approximately 35 per cent. were born in Italy, and 65 per cent. in England.
(3) Approximately 60 per cent. always or mostly spoke Italian at home, while the majority of the others understood and spoke some Italian.
(4) Almost 70 per cent. of the children return to Italy for holidays of from two to six months, during which time they speak Italian or broken Italian.
(5) On three evenings per week 66 per cent. of the children attend Italian classes.

Results of the spelling tests show a pronounced weakness of Italian children, in age-groups 11 to 14, as compared with English children in the same neighbourhood. The eleven-year-old pupils were retarded by almost one mental year,

a deficiency which rose to a maximum with Italian boys of 14 who were backward in spelling by as much as three years.

Some of this weakness was due to the influence of Italian construction on English spelling, evidenced in the excessive tendency to spell phonetically, and in such errors as paculia (peculiar), dottro, dotero (doctor), nombrer (number), sugari (sugar) ; but it arose mainly from the preponderance of Italian spoken and read at home by many of these children. The younger pupils, many of whom had been born in England, were usually less " foreign " than their elder brothers and sisters. They spoke less Italian and conversed and read more often in English.

The disability in English spelling of the older children cannot, however, be attributed solely to the language influence. Several other factors must be mentioned. Firstly, the Italian child of the neighbourhood was more frequently the intellectual inferior of his school companions. Secondly, some of the older boys were handicapped through assisting their parents late into the evening, while others were not particularly interested in school progress in English, either written or spoken, on account of their strong extraneous interests in such activities as the Fascist Club and Italian classes.

(*d*) *Pupils of the École Protestante Française de Londres*

Situated in Noel Street is the École Protestante Française de Londres. The existing school is a remnant of a larger institution which had its origin in a Royal Charter, granted to French Protestants, allowing them to preserve their traditions and teach their pupils in a special school. The school is no longer essentially for French Protestants of London, for although French attend in appreciable numbers, two other large groups, Italian and English-French, together with a sprinkling of English, Welsh, Irish, Irish-French, Italian - French, Roumanian - French, Czechoslovakians, Spanish, Esthonians, Albanians, Swiss, Polish, and Russian now constitute its pupils.

It is the aim of the school to conduct lessons entirely in French three days per week and in English two days per week. This is observed with senior pupils, but with the junior classes the proportion is reversed. All arithmetic is taught in English, but history, geography, science, music, scripture, and some composition lessons are conducted in French. The senior boys and girls attain considerable fluency in French, while there are not a few talented pupils who are trilingual, speaking English, Italian and French very well.

Enquiry along similar lines to those cited in the last section showed that a large percentage of the parents could speak English, while in their homes, 60 per cent. of the pupils spoke English, 25 per cent. French, and 15 per cent. Italian. Results of the spelling test are given below.

TABLE XXI

Spelling Ages of Pupils of École Protestante Française

Pupils of the École Protestante Française.			Control.	
No. of Cases.	Chronological Age.	Spelling Age.	No. of Cases.	Spelling Age.
22	8	8·4	40	8·1
19	9	9·4	52	9·2
19	10	9·7	63	10·1
20	11	10·7	41	11·2
21	12	11·0	43	12·1
15	13	11·5	51	12·8
12	14	13·0	21	13·3
11	15	13·2	...	...

Errors in the test showed instances where words had been confused with their French equivalent, *e.g.* manier (manner), leçon (lesson), touche (touch) or where common letter combinations in French had been used to represent similar English sounds. Examination of the papers disclosed a few cases of normally intelligent children specifically retarded in spelling.

Summary

Based on a consideration of these results, tentative answers can be formulated to the three questions originally raised.

Firstly, one or both parents foreign, and the presence of a foreign language in the home need not necessarily in themselves be causes of spelling disability in children. Where children are English-speaking and English in outlook, in spite of foreign home influences, no spelling disability need occur.

Secondly, results indicate that where the above-named factors are present, and in addition the child speaks a foreign language, difficulty may be experienced with English spelling. It would seem that this effect is greater in the case of the less intelligent children. Very few bright Italians or normally intelligent pupils of the École Protestante de Française exhibited spelling disability. These conclusions need verification with large numbers and should include more intense influences of foreign parentage.

The importance of these findings for spelling is that for English children their attainments in spelling do not markedly depend on their linguistic background. The results strikingly supplement the earlier statistical findings of the preponderant influence on spelling achievement of school experiences.

CHAPTER XIII

DIAGNOSIS OF DISABILITY IN SPELLING

PUPILS whose spelling attainments were markedly below normal were first given two or three of these tests :

Test S 1. Burt's Graded Spelling Vocabulary Test.[1]
Test S 2. Schonell's Graded Spelling Test (Regular).[2]
Test S 3. Schonell's Graded Dictation Tests.[2]

The first test consists of a graded list of miscellaneous words which provides, with backward spellers, ample material for error.

Supplementary to Test S 1 is Test S 2, which, composed as it is of words more regular in structure, yields an estimate of the testee's power of sound analysis and auditory recall. The use of words which have more regular vowel and consonantal formations also reveals possible weaknesses in purity of pronunciation and syllabication. The third ten words in this test are, for example :

remind, chapter, trusting, repay, driven,
reporter, sung, planted, whenever, growing.

It is evident that if the testee's power of sound-letter analysis and synthesis is adequate, he can obtain a normal score with such material simply by translating sound into its visual symbols. If, however, phonic powers are weak, then results in this test will be worse than those from the other tests. In addition to these two tests it is advisable to measure the backward speller's ability to recall continuous material, since this is the form in which he is most frequently required to spell correctly. (Dictation tests may reveal difficulties not evidenced in word tests.)

Spelling ages for the various tests were calculated and a tabulation of errors was made on the basis of the schedule

[1] *Mental and Scholastic Tests*, p. 354.
[2] *Essentials in Teaching and Testing Spelling*, pp. 22-28.

outlined at the conclusion of the previous chapter. From the nature of the errors it is possible to estimate, to some extent, the relative ability of the pupil in auditory and visual methods of recalling words and the amount of emphasis he places on each of these two means of recall. For example, it is obvious that a pupil who gets the total pattern or schema of a word correct, or approximately correct, but the relative order of the letters incorrect, is endeavouring to recall visually. He writes :

" agian "	for	" again "
" brigth "	for	" bright "
" tehecar "	for	" teacher."

Whereas a pupil of the opposite type who is over-emphasising the auditory aspects and neglecting, to some extent, visual components, writes :

" agane "	for	" again "
" forain " or " foren "	for	" foreign "
" techer "	for	" teacher."

There is, however, the backward speller whose error profile is quite different from either of those just cited. He writes :

" acar "	for	" again "
" folne "	for	" foreign "
" teshr "	for	" teacher "

revealing very clearly his poor powers of auditory analysis.

Now the difficulty arises of having to determine for remedial purpose, how far the backward speller's visual perception or auditory perception, as the case may be, is weak through organic, mental or environmental causes. The case study technique outlined elsewhere aids instrumentally in this aspect of the diagnosis, but it is also occasionally advisable to employ additional diagnostic tests to provide further information. For this purpose three additional tests were constructed.[1] They are :

[1] Detailed instructions for administering these tests are given in Appendix II.

Test S 4. Immediate Recall of Three-Letter Words (Visual Presentation).
Test S 5. Immediate Recall of Three-Letter Words (Auditory Presentation).
Test S 6. Immediate Recall of Nonsense Syllables (Visual Presentation).

Tests S 4 and S 5 were compiled from three-letter concrete nouns, which were used to minimise the effects of serious reading and spelling disabilities on the part of the testees. In selecting the words, care was taken to see that in the same column none of the letters, initial, middle or final, of consecutive words were the same. An attempt was also made to employ a variety of consonants and an adequate distribution of vowels. The words for the visual presentation —3 inches high and 8 inches across—were printed in black letters on stiff white sheets, and they were arranged in columns, increasing in number from three to eight, thus :

GEM	VAN	CAT	HAM	PAN	JAR
BIB	WIG	BUN	FUR	DOT	PIP
SUN	JAM	HIP	JAW	RAY	RUT
	COT	NUT	FIN	DEN	MAP
		BOY	HAY	LAP	GUM
			DOG	SUM	PAW
			PET	LOG	
				RIM	

The time of exposure was one second per letter. Thus a group of six words was shown for eighteen seconds.

The auditory list was similarly arranged in groups of from three to eight words. These were read aloud, one group at a time, slowly and distinctly, the reading of a list occupying the same time as the usual presentation of a similar number of words. Preliminary testing showed that this procedure was superior to reading the words through twice, since with the latter procedure perseverative influences (*i.e.* the tendency for sounds to recur spontaneously in the

mind) were much stronger. The actual list was as follows :

JET	BUN	FAT	BED	HEM	TAP
SAP	LAD	LID	RAG	BAY	PIT
FEN	FOG	BAR	HEN	TIN	LEG
NET	ROD	LIP	RAT	BAT	
	CAB	MUD	MOP	PUP	
		CAN	BUD	CAR	
			TAR	RIB	
				MUG	

The testees were asked to write their responses in column form, as above, to facilitate marking.

Test S 6, *Immediate Recall of Three-Letter Nonsense Syllables (Visual Presentation).*

This test, which consisted of three-letter nonsense syllables, was constructed on lines similar to Tests S 4 and S 5. As one object of the test was to obtain an estimate of the pupil's power to handle new linguistic forms, an attempt was made to select syllables that would not set up quick and easy associations. For example, combinations such as :

LUK	suggesting	luck,
CAF	,,	café,
GEF	,,	a boy's name,
MIS	,,	miss,
HUD	,,	Hudson,

would be easier to recall than a series such as :

KUV
TEF
NAD
LEB
DUT

The final selection of syllables aimed at eliminating old associations, visual or auditory, and providing material for

measuring the pupil's basic visual perceptual powers with groups of letters. In this it proved to be particularly successful. The actual list was as follows :

JED	ZID	KUV	NIV	KED	NOL
KIB	BOL	TEF	POZ	BUP	PAB
VEL	SEF	NAD	DIB	KIF	LIR
	YAB	LEB	FEG	RUZ	JEP
		DUT	ZAD	MOV	KOV
			TOB	JEB	TID
				VAD	BUP
					YAT

The same time (one second per letter) and method of presentation (letters 3 inches high on sheets) was observed as for the three-letter word test.

Method of Marking Tests S 4, S 5, and S 6

In evaluating the results of these word tests the following scheme of marking was observed :

(1) One mark was given for each correct letter in its correct position.
(2) One extra mark was given if the word or nonsense syllable was in its correct position in a column.
(3) One mark was deducted if a letter was added or inserted.

Thus a column of six words correctly reproduced obtains 24 marks. Illustrations of the principle of marking incorrect versions of this list are given below :

HAM 4	HEM 3	HAM 4	HAM 4	HAM 4
FUR 4	FIR 3	FUR 4	— 0	DUG 2
JAW 4	JAW 4	— 0	JAW 4	HAY 3
FIN 4	FIN 4	FIN 4	FINE 3	FIR 2
HAY 4	HAY 4	HAY 4	DOG 3	
DOG 4	DOG 4	DOG 4	HAY 3	
24 marks.	22 marks.	20 marks.	17 marks.	11 marks.

The various deductions for errors such as incorrect or misplaced words, and for substituted, omitted or added letters, can be readily calculated from these sample mark lists.

Standardisation of the Tests

Tentative Norms were obtained from approximately 300 boys and 300 girls aged 7 to 13 years, age being taken as age last birthday.

For each test a carefully constructed set of instructions was devised ; these were strictly observed both during the standardisation and during the examination of cases of backwardness.

The pupils were asked to do their best and the tests were regarded as games rather than as tests. Averages and standard deviations were calculated for the various age-groups, and these together with the tests are to be found in an Appendix at the end of the book.

The correlations of the tests with reading and spelling ability were as follows :

		Reading (word recognition).	Spelling.
Test S 4.	Visual words . .	. 0·65±0·07	0·63±0·05
Test S 5.	Auditory words . .	. 0·62±0·06	0·43±0·08
Test S 6.	Nonsense syllables . .	. 0·60±0·05	0·70±0·04

The importance of pure visual perceptual ability in spelling is plainly evident.

Values of the Three-Letter Word and Syllable Tests

The three-letter tests had value in revealing different deficiencies connected with disability in spelling. In the first place, they gave an insight into the pupil's general attack on words and attentional attitudes with respect to them. One was able to compare, in the case of the visual and auditory word tests, the pupil's ability in auditory and in visual recall with similar sets of material. Scores translated into mental ages by means of the norms often showed a decided weakness in auditory as compared with

visual methods of handling words, or vice versa. The nature of errors such as "wick" for "wig," "jem" for "gem," "sid" for "zid," and "fer" for "fur" in visual tests indicated undue auditory emphasis in recall.

On the other hand, results such as the following indicated, when there were extensive errors, a weakness in auditory analysis and recall.

J. R., age $8\frac{8}{12}$.

Reading age, 6·4. Spelling age 7.1.

Wrote			
den	for	bun
fit	,,	lad
fag	,,	fog

J. B., age $12\frac{1}{12}$.

Reading age, 9·6. Spelling age, 8.4.

Wrote		
jep	for	jet
vig	,,	wig
hem	,,	ham
pot	a fusion of	rat, mop.

Results from both words and nonsense syllables yielded an indication of deficiency in vowel sounds. Thus one testee, aged $10\frac{1}{12}$, showed her poor mastery of vowel sounds by substituting in a large number of words the easier vowel, namely, a for e, i and o.

Visual errors in the nature of confusions of "b" and "d," "p" and "q," "m" and "n," transposition of letters, and reversals of words and syllables provided useful diagnostic material, particularly for those backward readers and spellers who make a right-to-left attack on words. Thus one testee wrote :

DEJ	for	JED
BIK	,,	KIB
LEV	,,	VEL,

while complete reversals of tap, pit, bed, suggested a line of enquiry that might be pursued more intensively.

A clue to possible weakness of an auditory kind was also provided by the tests. Several types of error due to perseveration (auditory confusion) were distinguishable. Firstly, there was the tendency to perseverate a sound within the same column. *E.g.* H. G., aged $9\frac{8}{12}$, wrote :

BID	and	BAT
FID		FAT
WID		MAT.

Secondly, there was a progressive sound letter perseveration, as in :

PAW	and	CAP
SAW		RIP
WAS		TIN
		MIN

A third variation was to be found in those results where an initial letter was constantly repeated, as in

ZID	for	ZID	and	VAN	for	VAN
ZOL		BOL		WIG		WIG
ZIB		SEF		MAT		JAM
ZOB		YAB		MOL		COT
				MUT		

It should be remembered that all the verbal material was so arranged that no succeeding letters were duplicated. Perseverative errors were commoner amongst boys than girls and amongst children of subnormal intellectual ability than normal intellectual powers.

The determination of perceptual deficiencies is not the only part of an adequate diagnosis of spelling disability ; it is important, but account has also to be taken of temperamental attitudes and environmental difficulties in backwardness. The extent to which these enter is best judged from an examination of the summarised case studies of backward spellers given in the next chapter.

CHAPTER XIV

CAUSES OF DISABILITY IN SPELLING

THE causal factors which entered into the disability of 50 girls and 55 boys between the age of 7+ and 14 are set out in Table XXII (p. 298). Each case was investigated in detail, and, wherever possible, discrimination was made between major and minor causative conditions in the backwardness. Control group percentages are not given as they would not in any way be comparable; the figures in the table refer to cases in which (as determined by case studies) conditions cited were actual causes, not merely characteristics. (The percentage totals sometimes exceed the hundred, because with many of both sexes disability in spelling, as with other subjects, was due to a plurality of causes.)

Although backwardness in reading and in spelling are often found together, the following sections deal only with conditions of spelling disability.

1. *Weakness of Visual Perception of Words*

Weakness of visual perception, both for span and discrimination, is, as the table shows, one of the most important causal conditions in poor spelling. This deficiency manifests itself most markedly in the pupil's inability to remember the number and positions of elements in a visual series. Sometimes it is a general visual inaccuracy relating not only to recall of verbal material, but to digits, figures, forms and drawings. At other times it relates only to span and discrimination with regard to visual patterns of words.

The majority of poor spellers, who revealed a weakness in visual perception, possessed much superior powers of auditory analysis and synthesis of word forms; so that the nature of their spelling errors largely depended upon the

Table XXII

Causes of Specific Backwardness in Spelling as shown by 105 Pupils (50 girls and 55 boys)

No.	Causes.	Percentage of Cases.					
		Boys n. = 55.		Girls n. = 50.		Average.	
		Major.	Minor.	Major.	Minor.	Major.	Minor.
1	Irregularity of attendance, due to illness, accident or lack of parental control	7·3	3·6	8·0	4·0	7·6	3·8
2	Frequent change of school, especially between ages of five and eight years resulting in discontinuity accentuated often by emotional upset or change of teaching methods	...	1·8	8·0	...	4·0	0·9
3	Teaching methods unsuitable for certain types	3·6	1·8	4·0	...	3·8	0·9
4	Visual defects (unsuitable glasses, errors of refraction, strabismus, glasses worn irregularly, diseases of the eye)	7·3	3·6	6·0	12·0	6·7	7·8
5	Speech defects—						
	(*a*) Organic . . .	...	1·8	...	...	...	0·9
	(*b*) Functional: Intense .	7·3	...	...	...	3·8	...
	Slight . .	...	...	...	2·0	...	1·0
6	Defective hearing . . .	...	5·5	...	8·0	...	6·7
7	Slovenly, careless pronunciation	1·8	21·8	...	10·0	0·9	15·9
8	Weak visual perception for verbal material (short span)	29·1	1·8	26·0	2·0	27·5	1·9
9	Weak auditory perception for verbal material (short span)	15·5	1·8	16·0	6·0	15·7	3·9
10	Weak visual perception for verbal material (discrimination)	9·1	5·5	...	4·0	4·5	4·7
11	Weak auditory perception for verbal material (discrimination)	23·6	5·5	22·0	8·0	22·8	6·7
12	General disregard for details, a temperamental attitude shown also in disregarding spelling details	8·5	1·8	4·0	...	6·2	0·9
13	Laziness, inattention and apathy in overcoming spelling disability, often accompanied by lack of persistence in overcoming difficulties	7·3	5·5	4·0	4·0	5·6	4·7
14	Emotional inhibitions—						
	(*a*) Inferiority attitudes .	12·8	17·3	14·8	20·0	13·8	18·6
	(*b*) Superiority attitudes .	...	3·6	...	...	...	1·8
15	Emotional instability of a choreic or semi-choreic nature	...	5·5	4·0	2·0	2·0	3·8

relative emphasis placed by them on visual and on auditory recall. Broadly speaking, two types of backward spellers were to be distinguished amongst the weak visualisers. Firstly, there were those who paid considerable attention to visual patterns of words and who tried to reproduce these in their spelling. In some cases the auditory aspects of the words, particularly the syllables, were obviously neglected.

Secondly, there were pupils who consciously or unconsciously realised their weakness in visual recall and who tended to reproduce almost exclusively the auditory forms of the words. Visual patterns of words were neglected and misspellings became, in most instances, phonetic analogies. Methods of teaching reading and spelling, particularly with regard to sight drills and phonic drills of words, influenced in some way the relative emphasis placed by these pupils on visual or auditory reproduction in their spelling. Furthermore, the types were not absolutely distinct and clear-cut, for there were characteristics common to both. In the main, however, a large percentage of their spelling errors were dissimilar enough to demonstrate their different mental attitudes in reproducing words.

2a. *Backward Speller who is a Weak Visualiser—Type A*

Errors typical of the first group of weak visualisers are :

(i) Confusion of visually similar letters.

(ii) Transposition of letters.

(iii) Reversals of short words, mistakes which would be minimised if the children supplemented their faulty visual powers by auditory-articulatory aids. Reference to concrete cases best illustrates the characteristics of this type of weak speller.

Ellen H., aged 9 (I.Q. 97), exhibited a specific weakness in visual powers. In the test of immediate memory for three-letter words she scored only 38, but when similar words were auditorily presented her score advanced to 65, an increase equivalent to more than three mental years.

Her visual span was limited to two three-letter words, whereas children of the same age could correctly recall four. With digits, too, her span was noticeably short, only five right (Binet mental age VII), yet when similar material was read she could manage to reproduce 7 digits. Letters and figures that were similar caused confusion: GEM would be replaced by CEM, FUR by FOR, while occasionally 3 would be written for 8, 2 for 3 and 5 for 8.

Other tests clearly revealed inaccuracies which had been more or less apparent in the reading and spelling errors. In cancelling selected letters from prose she omitted no less than 16 letters, 22 per cent. of the amount covered, twice as many as the average 9-year-old girl omits. The disparity between scores on perception tests visually presented and those auditorily presented is plainly manifested in the following psychograph :—

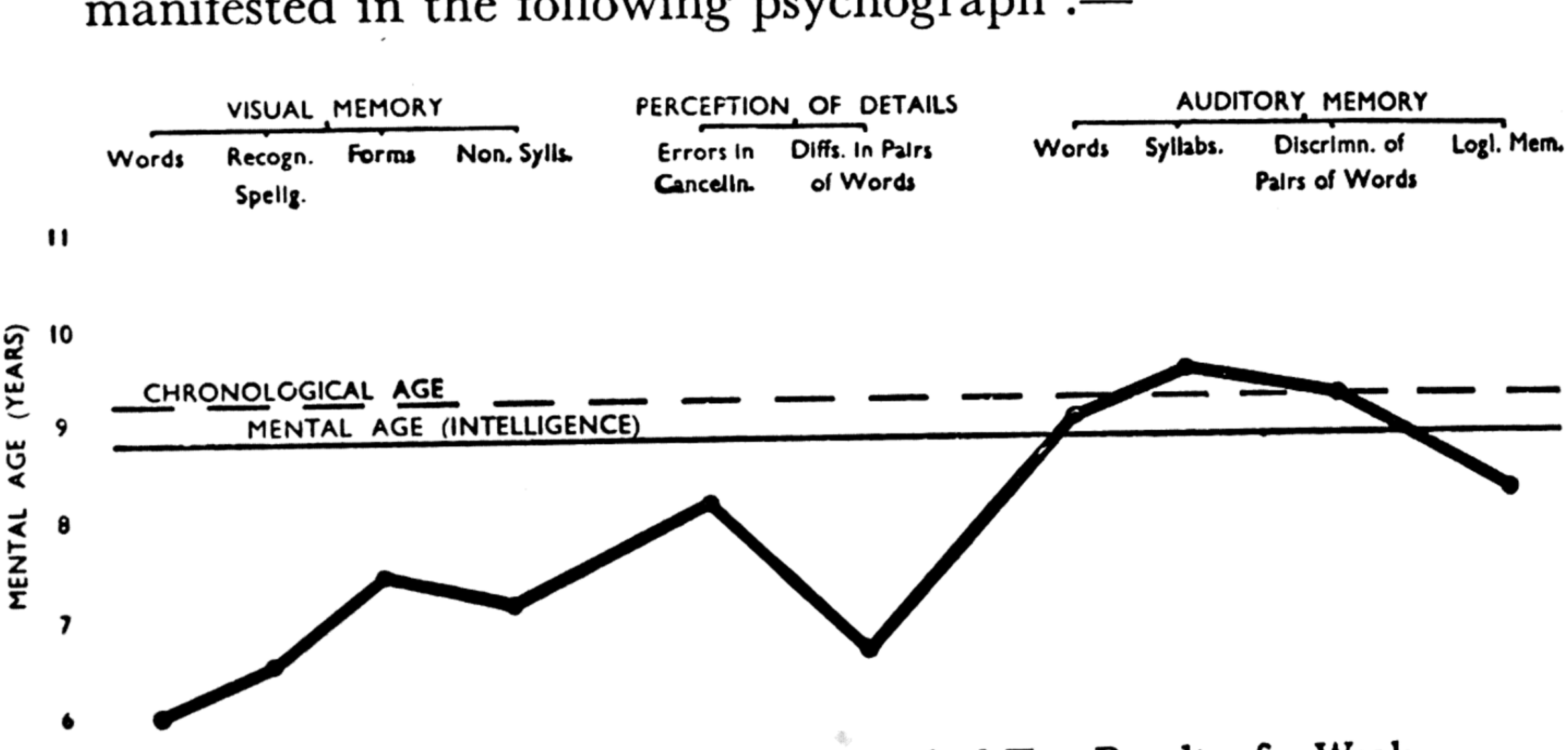


FIG. 6.—Psychograph showing Psychological Test Results of a Weak Visualiser. (Case Ellen H.)

Her reading errors were further evidence of faulty visualisation. Her attention seemed to be attracted by a dominant letter or some small familiar part to which she tacked on other letters, usually similar to the remaining ones but occasionally quite arbitrarily chosen. Her spelling mistakes contained numerous transpositions (*e.g.* poeple, creul, fialed, bueaty), and she showed to a marked degree the peculiarity of spelling words differently on successive

occasions. Often this is a characteristic error of this type of weak visualiser. They know the correct positions of some of the letters of which the word is composed ; for the rest they are sure of neither letters nor positions, so letters are placed here and there according to the hazy promptings of an inaccurate image which varies from occasion to occasion. At four different times Ellen's reproduction of " clock " and " stuck " were :

cloce,	clore,	cloce,	clock,
srick,	sriged,	scruk,	stuce.

It is interesting to compare her eccentric errors with those of the other type of weak visualiser, whose spelling of the two words was, in four successive attempts, always the same, namely, " clok " and " struk."

A similar type of weak speller to Ellen H. was George W., aged $10\frac{8}{12}$ (I.Q. 99), a likeable boy who attracted attention by his industry, conscientiousness and perseverance. His case is interesting because of the marked disparity between arithmetic and reading and spelling. In mechanical, mental and problem arithmetic his mental age scores were 10·5, 10·0 and 10·0 respectively. He revels in arithmetic lessons and is usually amongst the first five boys in all tests. In reading, his achievements only reach a level of 8·3 for accuracy and 8·5 for speed, while in spelling (word tests) and dictation his scores are, in mental ages, 7·6 and 8·0.

He writes in one composition :

> " In school *were* there are some *tehecar* we *bo* some *sun*. . . . There are some *bestr* in the school and we can *resed no* them and put *are* paper on *ti*." [" Resed " for " rest," and " are " for " our " are probably auditory errors.]
>
> (In school where there are some teacher(s) we do some sum(s). . . . There are some desks in the school and we can rest on them and put our paper on it.")

In another sample of his work the following errors occur :

"One *bay* a man built a *statuiy*. When he built it he said to *ti*, 'I will give you the *hod* world if you would come alive and be my wife.' At night when the clock went *tewlev* the *gril bid* come alive. . . . And the night drew dark and the two children and the *wanman canheg* to a *satuiy agian* and the father could not see them *everfrer*."

(One day a man built a statue. When he built it he said to it, 'I will give you the whole world if you would come alive and be my wife.' At night when the clock went to twelve the girl did come alive. . . . And the night drew dark and the two children and the woman changed to a statue again and the father could not see them ever after.)

These two samples reveal most plainly the nature of the boy's weakness in visual perception, his spelling of teacher (tehecar), do (bo), sum (sun), desks (bestr), twelve (tewlev), change (canheg), shows his difficulty in recalling related letter order of words. His errors also show how weak spelling may be adversely influenced by poor pronunciation (hod—whole ; are—our ; everfrer—ever after). George came from very poor home surroundings and his speech was extremely slovenly. An additional point of interest is the confusion of "b" and "d," "m" and "n," and the reversal of "on" and "it," although the boy was nearly 11 years of age.

2b. Backward Speller who is a Weak Visualiser—Type B

The second type of weak visualiser who neglects the visual forms of words, and hence makes no transposition, visual confusions or reversals because he relies almost wholly on auditory recall of word, is clearly portrayed in the case of John S., aged $10\frac{7}{12}$ (I.Q. 104).

John's history is illuminating, for it indicates, to some

extent, why he adhered so completely to a phonic spelling and neglected the more difficult aspect of remembering visual patterns of words. Until $8\frac{3}{12}$ years of age he attended a small private school, where side by side with an imperfect instruction in English went the teaching of French, which further influenced him to concentrate only upon phonetic constituents of words. In addition to this early handicap in the teaching of reading and spelling, John showed apathy and laziness towards his impoverished verbal attainments. This arose partly from home influences. John's father was a senior clerk in the Civil Service, and quite frequently his duties took him away from home for long periods ; this absence, together with the mother's indulgence, produced laxity of parental control. He refused to apply himself in reading, spelling and written composition, yet in his vocabulary and general knowledge he was well in advance of pupils of similar age. In the vocabulary test his score was equivalent to a mental age of 13, while in the Binet Test he showed his facility in handling the spoken word by giving 132 words in 3 minutes.

For mechanical, mental and problem arithmetic his mental age scores were 9·5 (this could easily have been raised to 10·5 but for careless errors), 10·0 and 10·2 respectively. His teacher reported that in seeing relationships quickly he was easily the best boy in the class. His writing was irregular, not from motor incoordination, but from carelessness. In art and handwork, in which he was very interested, his productions were superior to all within his class. In reading and spelling tests his scores were :

Reading—	
Speed	7·5
Accuracy . . .	7·3
Spelling—	
Graded Test . . .	7·3
Regular Words . .	9·2
Irregular Words . .	6·5
Dictation . . .	7·2

In reading, his efforts were characterised by excessive guessing—a combination of a real weakness in application and of a sense of superiority due to his excellence in oral lessons and his higher standard in most other subjects. He guessed a word and then quickly passed on to the next in an endeavour to make his backwardness less apparent to his listeners. He was in reality a very slow reader, and had difficulty in recognising even common words, mainly because he attempted to recognise them through their phonic constituents rather than through their visual pattern.

In spelling, his errors consisted in an extensive use of the phonic analogy with both difficult and easy words. The ingenuity of his phonic attempts show considerable intellectual ability, as can be seen in the appended example from his written English :

> " A man *werkt* for *yers* making a *whit marball statyou* of a *buttyful girel*. At *larst* he *grow* to *luv* her so much that one day he said to her, ' I *whicth* you *cod* be my *whif*,' just then the *clok struk twelv* and her *eys* began to open and her *sheeks* began to *redon*. . . ."

That he had made no attempt to memorise the visual forms of words is shown in errors in such simple words as " girl," " love," " could." Furthermore, there was a lack of uniformity about his phonic spellings. One day he would spell " statue " as " statyou," a week later as " statchoo," while " beautiful " would be spelled both as " buttyful " and " boutyfol."

3. *Weakness in Auditory Analysis and Synthesis of Verbal Material*

Weakness in auditory perception may take the form of a shortened span or a lowered power of analysis and synthesis ; both can reduce spelling efficiency, but the latter is the more potent causal factor. Most children who laboured under either or both of these handicaps did not exhibit defects in actual acuity of hearing. Their auditory

disability originated, not from a physiological imperfection, but from a psychological inexactitude. It was a specific mental failure limited almost exclusively to sounds of the human voice and showing itself mainly when they were required to analyse words into sound units and represent these by written symbols.

Backward spellers whose auditory analysis and discrimination was poor had difficulty in differentiating similar sound forms. The more two combinations resembled one another, the more likely were these children to confuse them in their spelling. For example, " were " would be used for " where " and vice-versa, " still " served for the spelling of " steal " in one place and for " style " in another.

Here, again, the nature of the spelling errors made by this group of pupils varied considerably with the varying reliance placed on auditory recall; if this was extreme the pupil's orthography was faulty in the extreme. Even short words were wrongly written, while longer ones were practically unrecognisable. Reference to a concrete case best delineates their characteristics. Albert H., aged $9\frac{7}{12}$ (I.Q. 105), showed most clearly in his test results a higher level in visual perception than in auditory perception. A psychograph of the various scores in mental years is reproduced on p. 306.

His reading results were :

Graded Word Test . . .	8·1
Continuous Prose—Speed . .	8·0
Accuracy .	8·0

His scores on the various spelling tests were :

Graded Word Test . . .	6·2
Regular Words	6·1
Irregular Words	6·8
Dictation	6·3

His reading was appreciably better than his spelling—almost 2 mental years—further evidence of the superiority of visual recognition over auditory powers. His spelling deficiency was extreme, being approximately $3\frac{1}{2}$ mental

years below his general intellectual standard, and 3 years below his attainments in arithmetic.

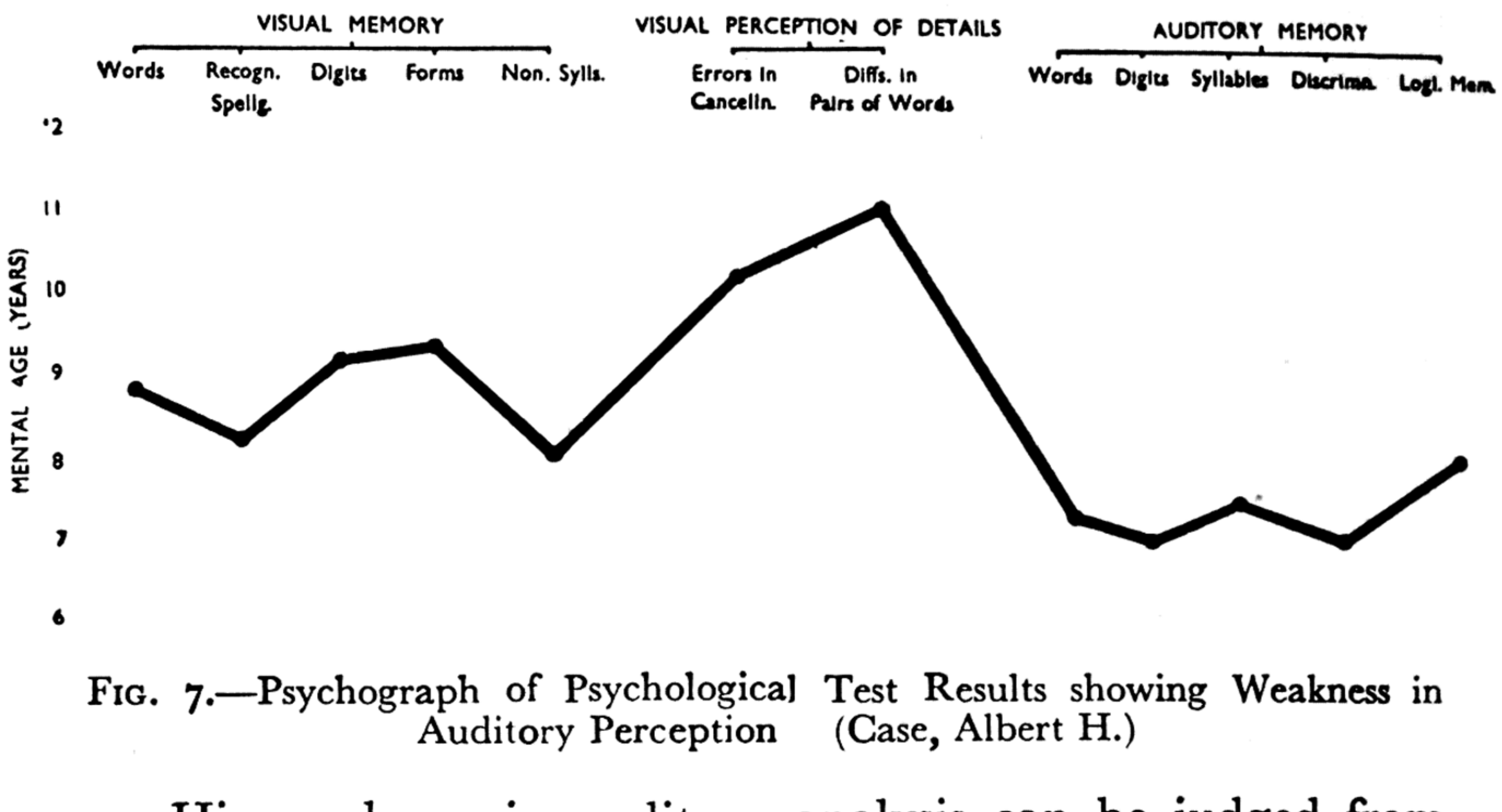


FIG. 7.—Psychograph of Psychological Test Results showing Weakness in Auditory Perception (Case, Albert H.)

His weakness in auditory analysis can be judged from these sample misspellings :

moey (money)
seger (sugar)
huler (number)
berter (bright)

Not only is his power of auditory analysis below normal but auditory discrimination and span are also deficient. This is shown by the inability to spell long words and by the auditory substitutions that characterise the following selection from his composition.

" In our *sclool* there are a large *nuber* of *chardren*. We come to *slool* from *Moday* to *Freday* and we do reading, drawing and all *sort* of *thinges*. One half day we go into the *playgound* for sport and my class is in a *sol finel*. If we do our work *turole* and *saratorre* we gain *mark* for our *colla*. . . .

(In our school there are a large number of children. We come to school from Monday to Friday and we do reading, drawing and all sorts of things. One half day we go into the playground for sport and my class is in a semi-final. If we do our work thoroughly and satisfactorily we gain marks for our colour. . . .)

4. *Dual Weakness*

The above case studies have emphasised either the visual or the auditory type of errors, but in some instances there is both auditory and visual difficulty. In the case study outlined below, the pupil showed a weakness in both fields of perception, and she intensely disliked spelling and refused to apply herself whenever barriers arose. She was an extremely imaginative child, who read voraciously, and was very interested in history and geography. She was spoilt at home by elder brothers and sisters, and spent a considerable time each evening in adult company and at adult entertainments. Her chronological age was 12$\frac{1}{12}$ (I.Q. 90) ; her reading age was 11·6, but in spelling she only made the score of an 8-year-old. The mixed nature of her errors, auditory and visual, is soon seen in this sample of her work :

> " The school to *wich* I go is only a *penney* ride from *whire* I live. I start in the *moring* at 9 o'clock when the *regeter* is *caled*, then we go out to *praes* after that we go into our *clase romes*. We *jennely* start with *athmertick wich* we do *untill* it is *harpast* 10, then *evary* girl goes into the playground. We have *lovly* sport having a game of *skiping* or shooting but that only *lapts* for a little time. . . .
>
> " One day we went to Kew Gardens. *Thire* are many *buttiful* flower beds *wich bing* forth nearly *evary* flower in *Eingland*. In the *gass houeses* there are flowers from *abord* such as *catces wich riece* right up *passt* the *ceiling hyer* than all the other plants. They are *hobble* things of *playn* green colour with spikes. My *farivet* part is the *famas palase* of queen *Charloletes pallce*."

The mistakes show marked weakness of an auditory nature, but visual confusions are also present.

5. *General and Specific Backwardness*

Finally, within the field of visual and auditory deficiency there are pupils who, in addition to impoverished specific abilities, also exhibit general backwardness of a less pronounced degree.

In this category was Charles A., aged $13\frac{3}{12}$, an earnest, reliable pupil, who lacked initiative and self-help within the classroom, but who showed both assertion and determination on the sporting field. Examination of his early history revealed that he was, between the ages of 5 and $7\frac{1}{2}$, a rather anæmic boy, subject to many of the ailments characteristic of that age. As a result, his instruction in the Infants' Department had been hampered by frequent short absences. On the whole, he did not lose more time than many other children of the same age, but in his particular case he could not afford to lose any time. An insufficiency of energy, both mental and physical, made his progress very slow. His achievements in reading and spelling were well below normal when the time came for him to go to the Junior School. It is possible that if the break had been delayed for nine months he would have gained enough additional knowledge to have considerably minimised his disability. His sister's educational history lends support to this supposition. She received additional individual aid early and is now a tolerably good reader. In the Boys' Department no one troubled to give Charles the extra individual tuition he needed, and his verbal attainments remained practically at a standstill. In health he was still a rather weakly child, and at the age of $8\frac{1}{2}$ was transferred to an open-air class. Here, too, for the next five years little effort had been made to teach him to read and to spell. His lessons had been taken mostly out in the park, much of his time being absorbed in handwork, story-telling, organised games and educational visits.

He had an intelligence quotient of 81, and although his arithmetic reached a 9-year-old standard, his reading

and spelling were only equivalent to that of 6·3 and 6·5 years respectively. His written English was of this kind :

> " *Wen bay thert* was a man *how* had a *wat mabbel sattrow* he *like* the *sattrow a* he *sed* to *hin siff* if the *sattrow* was *rile* I *wood morre har. Vast* then the *wort* and *kold sattrow becan rell.* She then got *of* the *stalow* and *tha* got *moreb.* 3 *trdren* were *bore* but one *bay* he *hat hare abd* she *kist* the *trdren* and she *rake* one *stape bake* and *stape* on the *stol* and she *tand* to *nabal* and the *trlden kard.*"
>
> (One day there was a man who had a white marble statue. He like(d) the statue and he said to himself, " If the statue was real I would marry her." Just then the white cold statue became real. She then got off the pedestal and they got married. Three children were born, but one day he hit her and she kissed the children and take (took) one step back and stepped on the pedestal and she turned to marble and the children cried.)

An analysis of the above reveals that of the 85 words 45 were wrongly spelt ; of the remaining 40 only 16 different words are correctly written. Thus his total spelling vocabulary was " the " (7), " and " (7), " she " (4), " he " (3), " a " (3), " then," " got," " was," " one " (2), " had," " were," " but," " to," " man," " if," " on."

The sample abounds with many types of common spelling errors :

1. Simple letter substitutions characteristic of 7-year-old pupils :

(*a*) Auditory or visual :

" d " confused with " b " (bay)
" m " „ „ " n " (nabal)
" c " „ „ " k " (kold)

(*b*) Motor :

"v" confused with "j" (as in " vast " for "just")
"v" „ „ "y" (as in "haye" for "have").

2. Errors due to mispronunciation ;

e.g. tha (they)
siff (self).

3. Phonic analogies :

rile (real)
sed (said).

4. Errors due to a weak power of auditory analysis and synthesis :

sattrow (statue)
trden (children)

He exhibited an almost complete inability to master variations in vowels, especially as they occur in dissyllabic and polysyllabic words ; " u," even in the simplest words, was not recognised. The following table gives an indication of the degree of his vowel confusion.

Vowel.	No. in Correct Spelling of Words.	Total No. Used by Charles A.	Correctly Used.	Replacing Other Vowels.						Total.
				a	e	i	o	u	y	
a	27	32	19	...	7	3	1	2	...	32
e (including final e)	52	36	27	11	...	1	1	...	1	36
				transposed (1) added (4)						
i	13	6	6	...	...	...	...	...	...	6
o	14	22	10	4	...	1	...	4	...	22
				transposed (1)						
u	8	1	1	...	...	...	...	...	...	1

The above figures are based solely on the number of vowels appearing in correct spellings of the words, *i.e.* the visual form without reference to their sound values. If we consider the sounds variously represented by the vowels his confusion appears to be still greater, while digraphs are almost invariably wrong.

Similar difficulty is experienced with consonantal digraphs—" ch " is never correctly reproduced, as seen in the spelling of " children " (treden), while " church " and " China " are elsewhere spelt " cac " and " cimer."

An error which shows his pronounced disability in spelling is his tendency to commence some words with the wrong letter. Thus he writes in one composition, "our noster oust os vosten" which is meant to represent "our master asks us questions."

The detailed analysis of this case demonstrates forcibly the result if reading and spelling disability is neglected. This boy had really made no progress since he left the Infant Department at the age of 7+ (a deplorable indictment of the school in which he had spent his last seven years).

6. *Sensory Defects amongst Backward Spellers*

Since learning to spell depends partly upon effective functioning of the organs involved in seeing, hearing, speaking and writing, it will be profitable to discover the percentage of sensory defects existing among backward spellers. Hence Table XXIII shows the frequency of the

TABLE XXIII

Percentages of Defects amongst Backward and Normal Spellers

Defect.	Backward Spellers.			Normal Spellers.		
	Boys.	Girls.	Aver.	Boys.	Girls.	Aver.
1. Choreic or semi-choreic instability	5·5	6·0	5·7	1·9	2·9	2·4
2. Defective vision—						
(*a*) Slight	5·5	8·0	6·7	5·7	7·3	6·5
(*b*) Marked	10·9	18·0	14·4	7·6	10·2	8·9
(*c*) Squint (marked) . .	3·6	2·0	2·8	...	0·4	0·2
3. Defective hearing . . .	5·5	8·0	6·7	3·4	5·5	4·5
4. Speech defects—						
(*a*) Organic	1·8	...	0·9	...	...	...
(*b*) Functional (slight) . .	...	2·0	1·0	3·4	1·8	2·6
(intense) . .	7·3	...	3·8	...	...	...
5. Have or have had enlarged tonsils * or adenoids	29·9	40·0	35·0	18·6	16·5	17·5

* It is significant to note that in a paper on adenoid deafness (kindly communicated to me by Dr F. Sturm), 32 per cent. of some 200 adult cases of deafness owed their incurable disability to nasopharyngeal disease in childhood. The author states that very rarely does he find an absolutely normal drumhead in an adenoid child. Furthermore, the operation of adenotonsillectomy does not always cure or prevent slight deafness in children. See *Annals of Otology, Rhinology and Laryngology*, June 1928, vol. xxxviii, no. 2, p. 579.

five defective physical conditions most likely to affect spelling ability. The figures for backward spellers are based on 105 cases (55 boys and 50 girls), while those for normal spellers were obtained from the boys' and girls' department of a school of average social status. The percentages show, in some cases, a slight divergence from those in Table XXII, in which case the defect was noted only if, as the result of a detailed case study, it was found to be a cause of backwardness.

7a. Defective Speech

As most of the causal conditions in the above table have already been considered in connection with reading disability, it will only be necessary here to refer briefly to defective speech and its relationship to disability in spelling. Defective speech is most potent in its effect on spelling attainments when it arises from a pronounced weakness in auditory discrimination of speech sounds. It may be of all degrees varying from a slight confusion of similar sounds in reading or writing to a marked weakness which affects speech, reading and spelling in a most pronounced way. Characteristic of the latter condition was Len E., aged $9\frac{1}{12}$ (I.Q. 90).

Information on family history revealed some significant facts. The father was a bricklayer's labourer who, judged by speech, appearance and general behaviour, was subnormal. Until 14 years of age he could speak only Welsh, and even now his speech was poor and difficult to follow. An adrenal type displaying more characteristics of the adrenal insufficient than the adrenal adequate, he was thick-set in appearance, boorish in nature, and unemotional in temperament. The mother was slight and fair in appearance. Her speech was almost refined, grammatically accurate and cultured in pronunciation and accent. Her letters to the headmaster showed that she could write as well as she could speak (they exhibited an accuracy of

structure and a correctness of spelling which were superior to others of the same social status). Highly emotional, neurotic in temperament, she was given to brooding and worry. Some time ago she spent two short periods in a mental home. Amongst the relatives on the mother's side there was plain evidence of intelligence and social attainments above average.

There were four children in the family, three boys and one girl. One boy, now aged 15, who went to the same school, suffered from a speech defect similar in nature but not as intense as that now afflicting his brother. Between the ages of 11 and 12 his speech began to improve steadily, so that by the time he left school he spoke almost normally. The girl, who is now 22, also suffered from a functional speech impediment until she was 10 years of age. On account of chorea and a low standard of health she had been sent to a home for nine months, and when she returned to her family the speech defect had almost disappeared.

Len, the present case, had not been entirely free from illness. At 3 and 4 years of age he had scarlet fever and diphtheria respectively, while at $7\frac{1}{2}$ he had slight congestion of the lungs. He had lately been receiving treatment for rheumatic trouble, due, probably, to a combination of post-diphtheric disturbance and general nervous instability. He displayed in the classroom (and while one was talking to him) reflex or habit spasms, screwing up his face and at times raising his right shoulder. It would seem, then, that Len's speech defect was the outcome of a number of different inherited factors, the most apparent of which were on the father's side, subnormality and difficulty in mastering of English and his present poor speech, and on the mother's side, emotional instability and neurotic tendencies.

The boy himself was a likeable lad, diffident at first about entering into conversation, but once this had passed, only too eager to talk with anyone who would take the trouble to understand what he said. He read correctly

fifteen monosyllabic words (*i.e.* reading age 5 years 5 months) and wrote correctly ten words of a graded spelling test (*i.e.* spelling age of 6 years). His attainments in arithmetic were quite on a level with those of normal children in the class in which he was placed. His general knowledge and vocabulary were superior to some children of the same age and social grade. The extreme nature of his retardation in written English is to be seen in his composition on " School."

> " The voxhe scrs wie gro sue and wie gro viin and we gro ruin and we gro groin. Sue fo uo gin the sci, the du 5. Wie go in the vor and wie cin we oio and uci wie go ba rin cothe and co ba. Cuco wie sdand in the all and one of the sithe cu the cvi no the dovo, the du the is of theco."
>
> (The Forster School we do sums and we do writing and we do drawing. Some of us get the stick, about 5. We go in the hall, we sing, we pray and next we go back in the classroom and go back. Sometimes we stand in the hall, and one of the teachers tells the story out of the Bible—the story of the Israelites.)

The execution of this strange literary effort occupied a full half-hour and involved an immense amount of strain on the boy. He indulged in innumerable and varied twistings and turnings of the tongue and lips in an endeavour to translate his ideas into written words through the medium of their sound values. Just how distorted these articulatory movements were and how distorted the auditory elements were which he thus called up can, to some extent, be gauged from the strangeness of his orthography. It was not due to a paucity of ideas that he wrote so little (for in oral composition he expressed himself freely), but to the intense emotional inhibition that entered when he tried to change his thoughts into written language. The feeling of helplessness resulting from the ineffectiveness of his articulatory motor movements had been accentuated by the means employed in trying to teach him to read and to spell, namely, a phonic

method which laid stress on articulatory-auditory analysis of words. He required emphasis on visual and kinæsthetic methods.

Subsequent remedial work showed that the sounds with which he most frequently experienced difficulty were those of :

C spoken as " she " or " ch "
S " " " ch "
V " " " vree "
L " " " ull "
Z " " " ched "
M " " " n " (lips not closed)
T " " " k "

" j," " g " and " d " were all confused with one another. Thus he would say " baschet " (basket), " chining " (shining), " kerries " (cherries), " graw " (draw). His verbal retardation was not only due to the above speech errors but to confusion in writing some letters ; for example, b, p ; l, i ; p, a ; v, y, were sources of uncertainty.

Remedial teaching was carried out with him for some time, and a certain amount of progress was achieved through visual and kinæsthetic methods in writing, and through word building and imitative exercises in speech.

The pronounced verbal backwardness of this boy, who represented an extreme form of the common type whose power of auditory discrimination in speech is weak,[1] illustrates one point, namely, the importance of auditory and articulatory activity in learning to read and to spell. If through organic defects or through initial weakness in discriminating similar " letter sounds " (which, unless there is extra training of a systematic type, leads to fixation of faulty speech habits) children are unable to speak correctly, they labour under a handicap which in acquirement of skill in reading and spelling is often greater than that occasioned by defective vision.

[1] See pp. 176-79, Chapter IX, in particular the cases of Albert, Sidney and Hilda B.

7b. Faulty Pronunciation and its Influence on Accurate Spelling

Throughout the research there was ample evidence that faulty pronunciation was a frequent contributory cause of misspelling. It was never the major or sole causal factor in a case of backwardness, but it was observed that, if a child constantly pronounced inaccurately, he not infrequently spelt inaccurately and the nature of his written errors bore marked similarity to the nature of his spoken errors.

The causes of a child's faulty pronunciation were three :

(*a*) Bad environmental influences of home and companions.
(*b*) Habitual lip laziness.
(*c*) Shyness and inferiority attitude towards speech which resulted in mumbling, slurring and clipping words when reading and speaking.

The factors affecting the incidence of mistakes in spelling due to mispronunciation were fourfold. Firstly, this type of error was commonest amongst children of poor social grade. Secondly, younger children were more prone to them than older children. Many young pupils actually say the words aloud when they write, so that there is greater likelihood of pronunciation errors becoming spelling errors. As familiarity with words increases and the mechanics of writing become almost automatic, there is less reliance on the articulatory motor and auditory aids in spelling and more on the visual and grapho-motor aids. From actually saying the words the pupil passes to an abbreviated form of articulation and thence to "inner speech," when no movement by the lips is perceptible or sound audible, but where there is in many cases a slight movement of the tongue, the soft palate, or some other portion of the vocal organs.[1] Some of the shortcomings

[1] For additional information on speech and spelling see "The Relation between Defective Speech and Disability in Spelling," Fred J. Schonell, *The British Journal of Educational Psychology*, vol. iv, part ii, June 1934. In this article the influence of stammering on spelling disability is considered in detail and comparisons are made between stammerers and non-stammerers in spelling ability (pp. 133-136).

in the speech of 7, 8, and 9-year-olds disappear with age; a child might write "ferver" (further) and "eneyfink" (anything) at 8, but not at 10.

Thirdly, spelling errors due essentially to mispronunciation are more prevalent amongst boys than girls—the proportion in the cases studied was 21·8 to 10 per cent. It was more often boys who wrote sentences such as, "Hower techr as to gife us sunfink to do, when he goes to fooball in the arfnoon." No doubt this sex difference is a further manifestation of that characteristic of tidiness and attention to details which one finds more strongly developed in girls than boys. The girl, more attentive to tidy habits in dress and work, is also unconsciously concerned with tidiness in speech.[1]

Fourthly, pupils who rely overmuch on auditory recall in spelling are apt to be led astray by faulty pronunciation more frequently than those who make adequate use of recall by visual means.

8. *General Disregard for Details*

One finds in every classroom children whose actions are constantly being influenced by what we might loosely term a tidiness sentiment. In habits, morals, work, dress, and even minor social conventions, there is excessive attention to small details. They are the pupils whose writing is extremely neat and regular, whose orderly setting out in arithmetic compensates, perhaps, for any lack of reasoning ability, by increasing their accuracy in calculation, whose handwork, though often not strikingly original, is a pattern of careful execution. They are the children who must always have a margin on their paper, who must always erase an error with an eraser and rule a line with a ruler. Most frequently they—amongst whom girls are the majority—are the scholars whose oral reading exhibits

[1] There is considerable evidence to show that facility in speech is a sex-linked characteristic.

fewest additions, substitutions, and omissions, and whose spelling is characterised by a high degree of accuracy.

At the other extreme are pupils whose behaviour, in contradistinction to those obsessed with a passion for a precise correctness of detail, seems to be determined by a studied disregard for order and detail. They cannot bear to be subjected too strongly to systematic arrangements. To them approximations are just as acceptable as carefully considered measures.

Results of the research show that this attitude of untidiness, carelessness and non-observance of detail is at times the basis of some spelling disability. As a major factor it was apparent in two girls and three boys, while it was a subordinate factor in the backwardness of two other boys. Those pupils for whom it was the primary cause of weak spelling had attended school regularly, were in good health, were normal in general intelligence and in perceptual power, and were not possessed of any sensory defects.

Set out in Table XXIV are the chronological, mental, spelling and reading ages of this small group.

The ages of the children range from $11\frac{9}{12}$ to $13\frac{11}{12}$, a significant fact, for it is possible that the spelling disability of these children might have been to some slight extent

TABLE XXIV

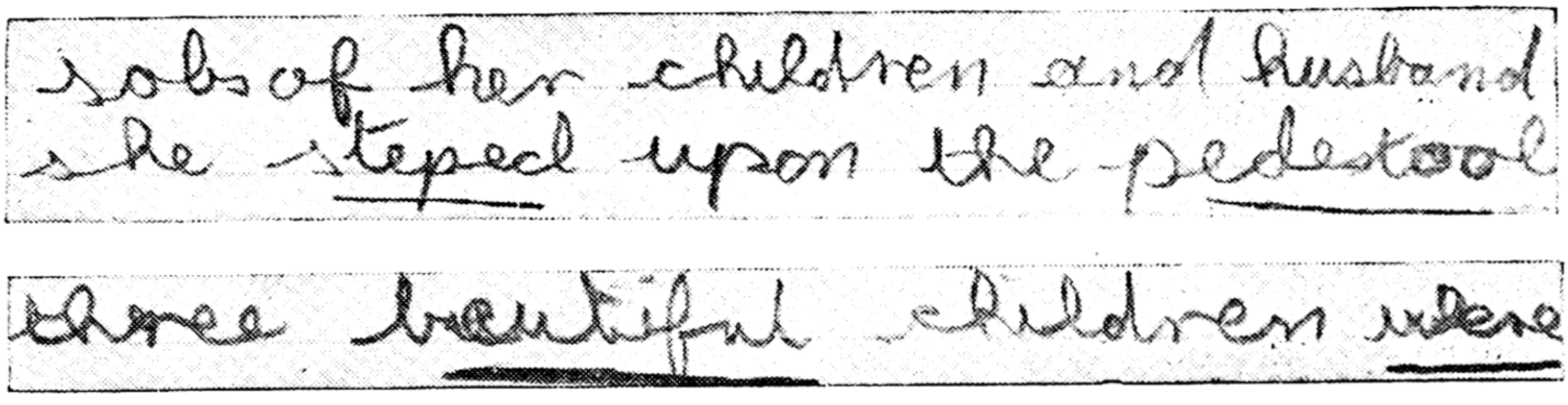
Chronological, Mental, Spelling and Reading Ages of Pupils whose Spelling Disability is mainly Temperamental

Name.	Chron. Age.	I.Q.	Spelling Age.		Reading Age.			
			Words.	Dict.	Graded Words.	Monos. (Speed).	Prose (Acc.).	Prose Speed.
Iris R.	12·0	112	10·0	9·6	11·1	9·6	12·0	9·9
Joan B.	$12\frac{11}{12}$	108	11·0	10·4	12·6	13·0	12·9	13·5
Peter M.	$11\frac{9}{12}$	120	8·7	9·0	12·0	12·5	12·1	12·2
Sidney C.	$12\frac{9}{12}$	96	9·8	10·0	11·1	14·0	13·0	14·0
Robert R.	$13\frac{6}{12}$	96	9·3	9·5	10·0	14·0	10·0	13·9
Fred H.	$13\frac{2}{12}$	96	9·3	9·4	9·8	10·2	...	...
Robert H.	$13\frac{11}{12}$	96	9·6	9·9	10·6	12·5	...	...

accentuated by pubertal or prepubertal instability. Witnesses who gave evidence before the Consultative Committee regarding differentiation of the curriculum for boys and girls in secondary schools [1] were of the opinion that the work of some children of both sexes between the ages of 12 and 14 showed a temporary falling off in care bestowed upon it and observance of details connected with it. Burt has drawn attention to the pubertal decline in accuracy. He says, "Tests of spelling and handwriting as well as tests of mechanical arithmetic show this increase of unsteadiness at puberty." [2]

It would seem, too, that it is the bright rather than the dull child whose impetuous nature rebels most strongly against the conventions of orthography. Needless to say, it was not only in spelling that the careless attitude of these pupils manifested itself. Their writing provided a psychological portrait of the impatience and impetuosity of their nature. It was wide [3] and irregular both in shape and alignment. Joinings and completions of letters were slovenly, while crossings-out and alterations were numerous, the latter a trait which rather betokened acting first and thinking afterwards.

The following is a sample of Sidney C.'s writing :—



The arithmetical ability of the group was distinctly good. It differed from that of many children in that their attainments in problem work were slightly superior to

[1] *Differentiation of the Curriculum for Boys and Girls respectively in Secondary Schools*, p. 98 (H.M.S.O., 1921).

[2] C. Burt, *Mental and Scholastic Tests*, p. 302, footnote 2.

[3] A characteristic which Saudek and other graphologists regard as indicative of frankness, assiduity and impatience. See R. Saudek, *The Psychology of Handwriting*, p. 35.

those in mechanical tests, in which there were repeated careless errors.

Two interesting facts about their reading confirm the diagnosis that their weakness in spelling was largely due to temperamental causes. In the entire group of 105 backward spellers there were very few pupils who did not also show some backwardness in reading, yet in this group of seven pupils all the reading ages were above the spelling ages and in four instances they were practically level with the general mental ages. This tends to confirm the conclusion that there was nothing intrinsically wrong with their powers of perception. Further, in all except one case, their speed of reading shows a considerable increase over their accuracy, but as with other academic activities here, too, correctness suffered in the desire for speed—" himself " would be pronounced as " hisself," " mountains " as " moutins," " extraordinary " as " extrordery."

In spelling, the commonest error was the lapse seen in three forms :

(i) Where careless writing and speed caused the substitution or omission of visually similar letters, thus:
" mouth " for " month,"
" pulish " for " publish."

(ii) Omission of final letters and prefixes :
" alway " for " always,"
" kiss " for " kissed."

Robert R., in fifteen words in a remedial test, wrote " entance," " avarage," " bagain," " crysal." He could spell them all orally.

(iii) A lapse into phonetic spelling of quite easy words. Thus Joan B. wrote : " *Poeple* make a *grate deel* of money on a river in London." On being asked to spell the sentence aloud she had every word correct.

It was characteristic of the group that their oral spelling was superior to their written spelling.

Typical of the group was Joan B., a bright, bubbling type of girl, who was ever active and ever ready to please. She delighted in showing younger children how to do things. Careless and impetuous, she was continually rushing through her arithmetic or her English in order to assist her teacher or to continue reading a favourite book.

Two of the group were spoilt children, for whom home indulgence by elders had prevented them from ever applying themselves at all thoroughly to points of detail.

9. Emotional Inhibitions resulting from Failure

Amongst the backward spellers there were 29·1 per cent. of the boys and 30 per cent. of the girls in whom an abnormal development of the self-regarding sentiment was an important factor in their disability. These were classified into two groups, representing extreme aspects of the one type:

(*a*) Those who on account of repeated failure and wrong treatment had developed what might loosely be termed "an inferiority complex."

(*b*) Those who had developed a compensatory attitude of bluff to hide their shortcomings and who, in consequence, refused to realise or admit their weakness.

The first and commoner condition was observed in equal numbers of boys and girls. The second and rarer was exclusively characteristic of boys. The most apparent distinguishing feature of the first group was the high percentage of physical affliction among them. No less than 50 per cent. had some sensory defect—short sight, squint, and intense speech defects being the commonest.

Their lack of confidence in themselves manifested itself in many of the tests. For example, in the Binet-Simon examination one boy aged $11\frac{9}{12}$ (I.Q. 92), in answer to "Will you read this for me?" immediately replied, "I can't read much." Yet he managed to read the passage

in thirty-four seconds with one slight error, afterwards recounting ten items. In reply to "What is the date?" he said he did not know, but upon the items being taken separately, he gave correct responses. Again, in naming the months he enumerated seven, and then gave up, saying that he could not remember the rest; with a little encouragement he correctly completed the series. The uncertainty of his decisions was evidenced in the weight discrimination test; in which the more trials he was allowed, the more variations of wrong responses he made. It is the boy's ambition to be able to swim, but there is little doubt that he is being prevented from conquest here by insufficient self-confidence, for in his composition he writes:

> "I can swim a little way, and then I feel I cannot go farver and under I go."

Interestingly enough, when I was speaking to the boy, he informed me that he thought he was not as clever as other boys.

The principal cause of his backwardness in spelling was faulty visual perception, accentuated by defective sight, but lack of self-assurance was a powerful contributory factor. He would write "sory" for "sorry," only to cross it out in favour of "sorrey"; "believe" would be spelt correctly at the first attempt, then altered to "ei," and similarly with other words. If one happened to stand near him during a spelling test, one noticed that he repeatedly wrote part of a word and then looked up with an air of indecision upon his face. If it were firmly suggested that he knew how to spell the words, more often than not, in the case of simple ones, he would correctly complete them.

Another member of this group, an emotionally unstable girl aged $11\frac{5}{12}$, confided to her teacher that she did not want to be promoted because the girls in the next class would laugh at her poor reading and bad spelling. (Such feelings of inferiority were most pronounced in the case of children with speech defects.)

The reading and spelling errors of all children labouring under loss of self-confidence were characteristic of their condition. In reading they baulked at every word they did not know, remaining silent until told the word. In spelling they were afraid of making mistakes ; often they omitted words or wrote them in a greatly contracted form. Thus in dictation

A. W. wrote : She cam to see or st— a bird nes—. (She came to seek or steal a bird's nest.)

R. H. wrote : The eng— stopped, the vesl dr— from her cos—. (The engine stopped, the vessel drifted from her course.)

Constant failure combined with fear and embarrassment (occasioned in some cases by unsuitable treatment in home and school) had confirmed in the minds of most of these pupils that they were permanently deficient in a particular capacity.

The characteristics of the second and less common type where compensatory attitudes had resulted from failure are illustrated in the following case. James G., aged 11 $\frac{6}{12}$ (I. Q. 94), a well-built boy, was the second eldest in a family of five children, who came from a poor home. In temperament he was energetic, assertive and outwardly self-confident. His teacher's report on him was, "Keen at his work and anxious to win commendation." He was looked up to by the smaller boys of his class on account of his ability in sport. His arithmetic was good, so he went to a higher class each day for that subject. Owing to weak visual discrimination of words and lack of application, he was retarded in spelling and reading by almost $3\frac{1}{2}$ mental years. He refused to acknowledge his extreme backwardness in these subjects, endeavouring to convince himself, his schoolmates, and even his teacher, that he could spell and read as well as anyone in the class. In reading he would hurry through a piece, glibly guessing and extemporising in an undertone to give listeners the idea that he knew all

the words. His version of Burt's Prose Test ran somewhat as follows :—

"On his way out (off) of the town he had to pass the prison (person) and as he looked (lived) in at the window (water) whom should (shod) he see but William (willie) peeping (picking) out of (for) . . ."

(Sixty errors in entire test.)

In composition, what he lacked in quality he made up for in quantity. His spelling was very weak, extemporisations of various kinds predominating, mostly auditory and occasionally visual, sometimes a jumble of both. His reproduction of the story of "The Marble Statue" contained plenty of ideas, but over one-third of the words were incorrectly spelt. The degree of his orthographic retardation can be judged from these sentences :

"Then she went *stive* and *ternd* to a *marblw stachw* a *girn*. She *cuolud* not *hert* the *weping* of her *cilnd* and her *husht*."

(Then she went stiff and turned to a marble statue again. She could not hear the weeping of her children and her husband.)

In the vocabulary test, too, this bolstered-up idea of himself was strikingly apparent. Far from admitting that he did not know some of the words, he confidently gave meanings for nearly all of them. Frequently the nature of the word suggested to him meanings which were quite erroneous, as in "plumbing" (gathering plums) and "priceless" (no price). In addition he gave explanations of substituted words, which were similar in sound, as skill (skull) means a person's head ; mellow (melon) means a kind of fruit. There were guesses such as :

limpet, a man who limps a lot ; milksop, a person who drinks a lot of milk.

To carry out effective remedial work with the boy it was necessary to make him realise that to all intents and purposes he was cheating himself. His class teacher was requested to refrain from asking him to read in class, and all remedial work was done alone, for it was noticed that when other boys were present he would relapse into his old habits.

Summary

General conditions connected with disability in spelling.

(1) Weakness in visual perception of words for both discrimination and span.
Two types of backward spellers in this category.

(2) Weakness in auditory analysis and synthesis of verbal material.
There may be a combination of (1) and (2) in some cases.

(3) Weakness in general intelligence, together with some perceptual deficiency.

(4) Sensory defects, particularly visual defects.

(5) Faulty pronunciation.

(6) Temperamental attitudes, particularly variations in attitudes towards correctness of detail.

(7) Emotional inhibitions.

(8) Environmental conditions, such as absence from school, frequent change of school, bad teaching methods.

CHAPTER XV

REMEDIAL TEACHING OF BACKWARD SPELLERS

Attitudes towards teaching Spelling

THERE are amongst teachers two distinct attitudes towards the teaching of spelling. The one is that children can learn to spell effectively simply through reading and related verbal experiences ; the other, that definite spelling lessons are required before children can attain orthographic accuracy.[1] Those who adhere to the first view make no provision in the daily time-table for a set spelling period. The study is made incidental to everyday work. This group (led by theorists, often without experience of teaching pupils between ages of 7+ and 11) discountenance the drill method on the ground that it is a mechanical grind, the monotony of which many pupils dislike, and that it is uneconomical. Those who hold the second view maintain that English spelling is mastered only by specific attentive repetition, since the perceptual process employed in the spelling of words is of a more detailed kind than that used in recognising them in reading. Furthermore, they urge that drill methods are not monotonous to younger children, a contention which is psychologically sound, for most children up to the age of ten or eleven show a particular liking for "rhythmic repetition" through which they gain more complete mastery over elements.

The first-mentioned attitude is largely a reaction against the old-fashioned spelling lesson which consisted in giving homework assignments consisting of long lists of words, many of them both useless and difficult. The testing of

[1] The two different aspects were apparent in the opinions expressed by the various witnesses who gave evidence before the Committee appointed by the President of the Board of Education to enquire into the position of English in the Educational System of England. See *The Teaching of English in England*, pp. 78-79 (H.M.S.O., London).

these was usually followed by writing the errors many times —a practice which does not teach the pupil to remember the words and at the same time engenders distaste for the subject. This form of spelling instruction has not entirely disappeared. Recently I found that the following list of words had been set as homework for a class of 9-year-old girls :—

glimpse	opaque	student
prospect	murky	response
spectacle	sombre	description
sign	inquire	descriptive
image	study	narration
spectator	answer	narrative
signal	respond	relation
obscure	questioner	repetition
veiled	enquirer	recitation

I was able to test one quite bright girl (I.Q. 120) with the words before she made an attempt to learn them ; she only wrote twelve correctly, but what is more significant she did not know the meanings of seven words and was unable to read six of them. Obviously, at least half of the words were mere verbal lumber. They were neither in the speaking nor the reading vocabulary of the child and she was being asked to do a meaningless and difficult task.

Similarly, the following list of words was the spelling material for a class of 13-year-old boys in a poor type of senior school, many of whose scholars became messengers, van boys, semi-skilled workers and helpers to casual labourers :—

deceased	dexterous	disobedient
dissent	diarrhœa	dispensary
deciduous	dinghy	draught
decrepit	diphtheria	dual
deferred	disagreeable	dyspepsia
demeanour	disastrous	eccentric
deteriorate	disinfectant	

In the list there are not more than six or seven words that these boys will ever use. They were wasting time on this useless task, while they could not write correctly such words as "coming, receipt, Saturday, position." But apart from the absolute uselessness of the words for the boys' actual needs, the list contained many possible confusions such as "de*c*eased," "d*i*ssent," single letters and double letters somewhat alike in sound, groupings that would tend to make their spelling worse rather than better.

There is no doubt that such lessons are unsound in almost every aspect. They engender distaste for spelling instruction, they produce loss of confidence in weak spellers and, above all, they waste time with material the child does not require to use. The reaction against this approach to spelling has, however, in a few quarters, been extremist, with the result that in some schools all the pupils are left to pick up English spelling as best they can. Certainly some children develop, without much aid, the correct analytic-synthetic procedure necessary for the assimilation of new words and will, in reading and in spelling, make progress irrespective of teacher or method. We do not, for this reason, fail to give reading lessons to young children, nor should we omit the spelling lesson. What was wrong with the old approach to spelling was not the principle of teaching children to spell words but the nature and number of the words selected—too many words were attempted and they were often not the ones appearing in the child's writing vocabulary.

Thompson [1] and Woody [2] have shown that instruction in spelling of the more enlightened kind brings about a permanent improvement, which is equivalent to one-half to three-quarters of a year's gain in excess of that to be

[1] R. S. Thompson, *The Effectiveness of Modern Spelling Instruction*, Teachers' College, Columbia University. Contribution to Education No. 436, New York City, 1930.

[2] C. Woody, *The Permanent Effects of the Teaching of Spelling*, University of Michigan Bureau of Educational Reference and Research, Bulletin No. 71, 1924.

expected as a function of general maturity and incidental learning.

Reading as an Aid to Spelling

Reading may teach spelling,[1] but only after the child has reached a certain degree of mastery in word recognition so that repeated impressions of the words assist him in remembering their intrinsic structure, *i.e.* their sound elements and the number and position of their letters.

Pertinent to this point is Richard's [2] experiment. He showed that when no specific instruction in spelling was given to seventy-eight elementary school pupils for a year, no less than 20·4 of the pupils remained stationary, while 12 per cent. failed to attain their scores of the previous year. If we are to prevent backwardness in spelling, junior pupils (particularly those weak in analysis of word forms and in perception of vital parts of words) must be given aid in spelling, not only in remembering specific words through association, but in seeing some reason in English spelling through a study of the similarity of structure which underlies certain groups of words. Attention to characteristics of words is at first a conscious process. At a later age this ability functions more or less unconsciously both in perceiving and in writing new words, particularly when some of them are simply new combinations of familiar ones.

Remedial Teaching of Backward Spellers

General Principles

As with remedial work in reading, so with spelling the first general aim after diagnosing the condition is to remove, or partially remove, the emotional inhibition resulting from accumulated failure. Hence the procedure generally

[1] We should not forget the excellent readers who cannot spell.

[2] A. Richard, "Spelling and the Individual System," *School and Society*, 1920, vol. x, pp. 647-650. See also S. D. Nisbet, "The Scientific Investigation of Spelling Instruction," *British Journal of Educational Psychology*, June 1941. Nisbet concludes that the gain due to reading is not sufficient to justify the neglect of specific spelling instruction.

followed was to give short regular lessons, using methods and materials suited to the pupil's individual requirements and calculated to produce success in the first stages. For this reason the number of words used for each lesson was reduced to a minimum—three words daily for backward spellers of spelling ages 6, 7 and 8, four words daily for spelling ages 9 and 10. The material used for remedial work consisted of everyday words selected from *The Essential Spelling List*,[1] a body of 3200 common words that form an adequate spelling vocabulary for elementary school children. The words were ones that pupils had occasion to use in their written work. Aid with spelling therefore released more mental energy for other aspects of their English work. The words had been graded according to spelling difficulty, so that it was possible to provide material increasing gradually in difficulty for backward spellers of different levels of attainment. To further facilitate learning the words were grouped in threes or fours on the basis of similarity of structure—mainly similarity of visual structure, but also similarity of auditory structure where no confusion would thereby be produced. Homonyms, words of similar sound but different spelling, *e.g.* plain, plane, were purposely kept apart. The object of grouping was to simplify the remedial material so that in the initial stages, while common sound families, vowel digraphs and consonantal digraphs were being mastered there would be no anomalous constructions that would lead the pupils to make wrong inferences. Very weak spellers commenced with word families like :

all	sing
ball	king
fall	thing

Here there is similarity of both visual and auditory structure. Gradually they were introduced to groups having some

[1] Fred J. Schonell, *The Essential Spelling List, 3200 Everyday Words Selected, Graded and Grouped according to Common Difficulty*, 8th impression (Macmillan, 1938).

slight variation in auditory structure while presenting, in the main, similarity of visual structure, thus :

here		eat
where	and	sea
there		read

Sometimes there was only a slight degree of structural resemblance, but sufficient to provide a clue to the spelling of the associated group of words. At other times the link between groups of words was that of usage—the words were all associated with a particular activity, object, or event of everyday life.

Results from controlled experiments reveal that words taught in groups according to the principles outlined above produce from 10 to 25 per cent. increase in accuracy of recall, immediate and delayed, over words taken in chance groupings, where in some cases the possibility of confusion is considerable. For example, in one alphabetic list " place " and " plaice " appeared together, while in another " deceased " and " diseased " followed one another.

The words were always taught in columns, because carefully planned research has shown that words are more effectively mastered when learnt in columns than when studied in explanatory phrases or sentences. When the pupil is presented with the written word only, he is able to focus his attention upon a single unit rather than spread it over a number of units. Obviously, explanatory phrases and sentences were used orally by the teacher to emphasise use and meaning of the words.

In procedure the remedial teaching followed these steps. The words were first read by the teacher and then the backward pupils repeated them, care being taken to see that correct pronunciation and enunciation were obtained. Next the pupils spelled the words aloud letter by letter and again by syllables (in disyllabic or poly-syllabic words). No division, underlining, accents or marking with coloured chalks was used in presenting the words, since it has been found that this tends to distort the

actual pattern or schema of the word and to handicap the pupil in forming a natural and stable visual image. Attention was, however, drawn to difficult parts of the words, if it could be done without suggesting possible errors, *e.g.* "sep*ara*te—note the *ara* like parade," not an injunction "don't put -erate"; this would probably lead to error. In the third step the words were written three times by the pupils in their best handwriting. Good writing is required in order that the pupils should derive maximum value from a consistent carefully executed motor movement. After this they traced over the material with their fingers at the same time spelling the words aloud. Then a trial recall was made and, finally, the pupils endeavoured to write the words from memory. In not a few cases the words were correctly written on the first attempt. Others found it necessary to repeat the preceding steps before complete accuracy was obtained.

The lessons usually lasted fifteen to twenty minutes, and in all instances words for preceding days of the week were first reviewed. Thus on Tuesday there were only three or four words to revise, while on Thursday nine or twelve words required revision before new material was commenced. Records of the revision showed that one in fifteen of the initial errors tended to be repeated. Not always was the revision of words simply a matter of retesting. Sometimes it took the form of individual trial recall on the part of the pupils. At other times the words were spelt orally. Whenever possible a play element was introduced and various games were used for revision purposes.

On Friday no new words were studied, but a revision of previously learnt words in prose form [1] was taken. All errors made by the pupils were entered in the alphabetic error book that each kept for his mistakes. As the remedial teaching proceeded, the pupils kept daily progress charts. For sections of backward spellers having a wide range of

[1] See pp. 75-96 of *Essentials in Teaching and Testing Spelling*, 4th impression, F. J. Schonell (Macmillan), for graded pieces of prose embodying the groups of common words in *The Essential Spellin ¿List.*

spelling ability in a class, individual treatment may be given by providing each pupil with a copy of the list of everyday words. Each pupil then learns just those groups of words in which he makes errors. Pupils can hear each other spell the particular groups of words on which they are working.

Specific Aid for Different Types of Backward Spellers

Although all backward spellers could be treated in a group along the general lines laid down, yet it was advisable to distinguish four different types, each of whom required emphasis on remedial teaching in a particular direction. Briefly, the types, as already mentioned in the section on causes, are four in number.

(A) *The Backward Speller whose Powers of Visual Perception are weak, but who places considerable Emphasis on Recall of Visual Patterns of Words*

For particulars of the cases of Ellen H. and George W. see Chapter XIV, pp. 299-302. Their typical errors are :

(*a*) transposition of letters in words, *e.g.* creul (cruel) ;
(*b*) confusion of visually similar letters, *e.g.* jod (job) ;
(*c*) substitution of letters, *e.g.* wanman (woman) ;
(*d*) reversal of short words, *e.g.* ti (it).

With these pupils the aim is to provide specific remedial measures that will help them to remember orientation and sequence of letters within the word. One obvious aid is to encourage them to check their spelling by articulatory-auditory means, that is, to say the word while writing it and to review it aloud after it has been written. Such gross errors as " canheg " for " change," " tehecar " for " teacher " will thereby be minimised. With subtler errors in vowel and consonantal digraphs the pupil, however,

requires additional assistance. This was obtained by providing a manual cue to the detailed pattern of words; the pupil where necessary was helped to change from script to cursive writing. The word pattern in cursive writing is complete, the letters being fused into a unitary kinæsthetic schema, whereas in printing the pattern is composed of separated letters which are more likely to be transposed. In addition, these pupils learnt new words, mainly by a tracing sounding method similar to that used with backward readers. Emphasis upon the kinæsthetic impressions considerably reduced the confusion in writing such letters as "b" and "d."

Further help was given by exercises in syllabising words. The pupil was taught to blend the visual and auditory bases for spelling words. Care was taken not to overweight the auditory aspects, for many weak spellers are only too ready to adopt a form of phonetic spelling. Where definite attempts are being made to recall the visual patterns of the words, the aim of remedial work should be to preserve this attitude, but at the same time to strengthen it by a judicious use of auditory and kinæsthetic methods.

Another exercise which proved useful to this type of backward speller was arranging words in dictionary order. The principle upon which a dictionary was compiled was explained to the group and they were required to arrange in dictionary form such a list as the following :—

ready	read	rabbit	rude
rock	remain	rage	reel
rang	receive	remove	raining
round	running	repeat	ribbon
rule	reach	ripe	rail
ruling	robber	rich	riding

Here the emphasis in an indirect way upon relative positions of letters assisted pupils in their observation of words.

(B) *The Backward Speller whose Visual Perception is weak (or has been weak through Visual Defects) and who adopts Phonetic Spelling, Words being recalled almost solely by their Phonetic Constituents*

The common errors of this group of backward spellers are the phonic analogies, resulting mainly in omissions, *e.g.* clok (clock), substitutions, *e.g.* dune (done), and additions, *e.g.* larst (last).

In the main, the remedial teaching of this group was designed to divorce them from their extreme dependence upon the sound elements in words and to assist them in noticing and recalling visual characteristics. Their power of phonic analysis had been developed to a pronounced degree, as was revealed in their ability to spell long regular words. Hence it was with visual patterns of words, letters and letter order that most of the specific remedial work dealt.

An exercise used with this group aimed at inducing them to look at letters irrespective of sounds.

e.g.—Put a line under pairs of words which contain the same two or more letters next to each other and in the same order. Read down the columns.

bough	blood	beads	fresh
ghost	shout	wrap	cheap
flies	*dried*	*there*	*receipt*
files	*field*	*where*	*receipt*
ring	from	*thistle*	head
thing	form	*whisper*	hare

In another effective exercise the pupils were required to transcribe carefully from a reading book a selected paragraph, from the material of which the teacher had previously prepared flash cards with phrases of two or three words. At the conclusion of the transcription the cards were shown in correct order, one at a time for five seconds, after which the pupils wrote down the phrase. No movement of lips or repeating of phrases was allowed. In a second stage of this exercise a piece of dictation, the

difficult words of which had previously been learnt by the pupils, was given by the teacher through the medium of flash cards.

The use of simple spelling rules, keeping individual errors in an alphabetic notebook, and solving simple cross-word puzzles based on spelling material [1] were additional devices employed to foster visual recall in spelling. The use of a dictionary, wherever possible, was encouraged. Several members of this group made striking progress. In two instances as much as 2·4 mental years' progress was achieved in seven months. This seemed evidence that the phonetic spelling was due as much to a habit as to any deficiency in visual perception.

(C) *Backward Spellers who experience Difficulty in the Auditory Aspect of Spelling, namely, in Discrimination of Similar Sound Combinations, particularly Vowels and Vowel Digraphs*

(For particulars, see case of Albert H., p. 305, and Charles A., Chapter XIV, p. 308.)

This type of weak speller is almost opposite in nature to Type B for, whereas the latter shows particular aptitude in associating sounds with combinations of letters, the former finds extreme difficulty in separating the sounds in words and associating them with their correct letters. Thus, whereas the phonetic speller writes :

kitin (kitten)
rase (raise)
nedl (needle)
towl (towel)
struk (struck)

a pupil weak in auditory discrimination writes :

caton
reay
niler
teal
stish

Obviously, those weak in powers of auditory discrimination of phonic analysis and of synthesis need carefully planned drills on basic sound combinations. For such children a certain proportion of the field of sound in language is

1 Useful in this respect is the *Educational Crossword Puzzle Book* (based on Thorndike's *Teachers' Word Book*) by R. Speer and J. McGaughy (World Book Company, 1925).

blurred and meaningless. They separate sounds from the continuum of sounds, only after repeated drills, in which the sound combinations have been used in a large number of similar examples. Even then difficulty is occasioned in some of the new forms; for example a backward speller, aged 10, who spelt "yell" and "low" correctly, wrote "yowls" as her representation of "yellow." Having once recognised in the two familiar words "yell" and (l)ow the sounds and corresponding letters of "yellow" her difficulty disappeared with that and similar words, as subsequent testing of words like "mellow," and "fellow," "pillow" and "billow" revealed. It is only along such lines that these children improve their spelling. It is necessary to isolate the common sound units, to drill the pupils with word families of these and then gradually to introduce them to new words which are merely combinations of the simpler elements.

Here, again, a scientifically graded and grouped body of common words, covering 80 to 90 per cent. of the elementary school pupil's writing vocabulary, provides the necessary remedial material. The pupil is given drill on common groups suited to his spelling age and attainments. For example, this represented the spelling material for three weeks' work for a pupil aged 10·1, spelling age 8·2.

park	tea	most
bark	teach	post
mark	teacher	stamp
market	earn	corner
poor	roof	yard
door	window	card
floor	broom	garden
bedroom	shade	spade
barn	less	meat
harm	bless	heat
farm	press	beat
farmer	such	neat

Y

fear	pass	town
clear	class	brown
heard	glass	flower
belt	leaf	bunch

At the end of each week the words were reviewed in prose form. The final review piece at the end of three weeks was as follows :—

> " I am a wild bird and this is my story. I was born in a nest in a tree, near a church. My mother, a pretty brown bird, was soon able to teach me to fly. It was a joy to stand on a roof, to turn in the cool air, and to rest by the sweet flowers in the gardens.
>
> " For my food, I eat grass seeds. In winter when the snow is thick on the ground, I am tame and peep in at the corners of the windows."

Regular lessons of this kind during which the common sound combinations were learnt and their use extended to new material enabled these backward spellers to make rapid progress.

Additional to the grouped words for spelling material, the pupils carried out word building at home, while supplementary to both activities was a certain amount of speech training.

(D) *The Backward Speller whose Standard of Orthographic Accuracy is lowered by Carelessness combined with a Neglect of the Details of Words*

The characteristic error of this type is the lapse, mainly letters omitted—" s," " ed," " t," " e "—from the endings of words, while in intermediate positions t, l, and n are sometimes missed. In actual powers of visual and auditory analysis and synthesis most of this group are normal, but impetuosity of manner and intolerance of detail predisposes them towards careless errors in learning, writing and speaking. Improvement in their writing and speech,

which is hasty and haphazard, produces corresponding improvement in spelling. As, however, the cause of the carelessness is temperamental as well as intellectual, one effective remedy is the habit of checking all that is written.

In conclusion, whatever the type of backward speller and whatever the remedial measures adopted, either specific or general, most improvement arises from the fact that the backward pupils have been considered as individuals, their difficulties have been diagnosed, some success has been attained, and praise has been given for efforts made.

CHAPTER XVI

DISABILITY IN ENGLISH COMPOSITION

Objectives and Values in Composition

Current educational practice too often considers English composition as a specific subject to be taught and tested during set periods, overlooking the fact that it is the most important manifestation of the child's attempt to express himself by means of spoken and written words. It should be remembered that this means of expression enters into nearly all subjects in the school curriculum. For example, even when the teacher is marking history, geography or science questions, he is consciously and unconsciously assessing the pupil's ability in written English as well. Consciously he gives credit for well-constructed answers, and unconsciously he is influenced into giving a few additional marks when explanations are clearer, when points are made with greater emphasis, when phrases are selected with greater suitability.

Burt [1] has shown that as a general factor in educational attainments in the elementary school, ability in composition exerts a powerful influence on half the subjects and a not unimportant influence on the remainder.

Nor is it only in school that the pupil's ability to express himself in clear and correct English is of paramount value; in everyday affairs this capacity is undoubtedly an individual's greatest asset. But although English, written and spoken, has such an important function in after life, yet in not a few schools insufficient time and thought are given to its cultivation. The results of the present investigation into backwardness in composition indicate clearly that a proportion of the time now allotted to certain subjects, particularly arithmetic, could more profitably be devoted

[1] *The Distribution and Relations of Educational Abilities*, L.C.C. Report, 1917 (P. S. King and Son).

to additional training in spoken and written English, both as a means of developing personality and as a preparation for life.

The curriculum in English composition labours, however, under a number of handicaps. There is lack of clarity with respect to its objectives, the need for integrating the various aspects of the subject has not been given sufficient attention, and the clash between the aims of junior and senior departments with respect to the relative emphasis that should be placed on mechanical and creative aspects of composition is only too evident.

Critical observations reveal also that in some schools there has been little progress in teaching methods in the last twenty years, and little attempt to differentiate material and methods for the different needs of different pupils within the same class. How often does one see the same type of aimless oral composition lesson. The teacher reads an extract or tells a story, after which four or five pupils haltingly recount parts of it, the others remaining inactive for almost two-thirds of the lesson. How often are all pupils in a class submitted to the same English exercises irrespective of their different levels in the mechanics of English. In written composition there still persists, in spite of Caldwell Cook's admirable lead [1] and the useful language projects that have been published, the same lack of incentive for the child to write either from knowledge of the subject or from the desire to write. There are still too many compositions written on topics like " A Fine Day in Japan," solely at the instigation of the teacher and mainly for the purpose of placing them in an exercise book with red ink correction marks dotted over them.

In oral and written composition it is time that psychological study of the mental outlook of the pupil replaced vague conjectures and haphazard methods. To some aspects of written composition, especially marking and correction, a final solution has certainly not yet been found, but sufficient progress has been made to indicate

[1] Caldwell Cook, *The Play Way* (Heineman Ltd.).

methods of greater reliability. It is possible, for example, to free marking of some of its erratic subjective variations, to make it less laborious, to endow it with diagnostic value, and above all to enable the pupil to participate more actively in it. In correction of errors, too, it would seem that a planned, but scientifically limited objective, together with attention to individual needs during and immediately after exercises, produces much greater improvement than older classroom methods.

General Procedure

Taking for granted that there is need to pay more attention to the cultivation of oral and written composition in the elementary school, and that it is necessary to consider composition as a means of expression closely related to individual development and experience, how are we to achieve these purposes?

In the first place we must be clear on the detailed objectives in our English curriculum and on the abilities which contribute towards achieving these objectives. In some schools these are not clear, for English has become a rather mixed subject with little unity or purpose about its manifold activities. An attempt at speech training is made in one lesson, some English exercises are given in another, a little misunderstood grammar is taken in the next, a written theme is hastily completed or perhaps half completed in a fourth lesson and so on, all efforts often lacking both in cohesion and continuity. The material used is not infrequently artificial, unrelated from lesson to lesson, and unconnected with the experiences of the pupils.

If we are to succeed in our endeavour for more and better English, both written and spoken, we must aim at making the various aspects of the subject cling together as parts of a related intelligible whole; we must select experiences intimately connected with the life and needs of the pupils; we must appreciate the proportionate values of the different elements which are included in the English

curriculum. We must attempt to answer questions like the following : What are the most effective incentives to Oral English ? What topics produce the best written composition at various age levels ? Which English exercises most aid children in their written themes ? Does a knowledge of English grammar help pupils to write correct English ? These and allied questions must be carefully considered and answered according to the age and intellectual calibre of the pupils. Furthermore, it is imperative to know the teaching methods best suited to achieve maximum progress with particular types of pupils and to have information on standards attained in written composition and characteristics of progress displayed from age-group to age-group. Finally, the whole English curriculum should be bound together in terms of the creative or expressional life of the child.

These remarks do not imply that the entire English curriculum should be thought of in the nature of one huge project, for it would at once be urged, and rightly so, that English demands increasing perfection of certain techniques. What is implied is that there should be more planned integration of English activities on the basis of real life experiences, that the functional values of English activities should be considered, and that more strenuous efforts should be made to blend technical and creative aspects in a natural way, at the same time keeping in mind that expression is as important as form. This is urged because during the present investigation into backwardness in composition it was evident that as much backwardness was due to unsuitable teaching methods and to insufficient consideration of functional values as to paucity of experiences or to mental handicaps of the children.

To the problems outlined in the foregoing pages, namely, those of standards of written composition and characteristics of different forms of composition at various age-group levels, to the consideration of topics and incentives in oral and written English and to various teaching devices and remedial methods in written English, Chapters XVII, XVIII and XIX are devoted. A consideration of the

common causes of disability in English composition will constitute the remainder of this chapter.

Causes of Disability in English Composition

As English composition is a means of expression closely related to individual development and experience, it is obvious that any examination of the factors entering into disability in composition should include, along with an assessment of intellectual equipment, a consideration of emotional and environmental influences.

Information on each case of backwardness in composition was collected by means of the usual case study schedule (see Chapter VI), but additional attention was paid to points more intimately connected with oral and written expression in English. These points were :

(*a*) Literary and cultural standards of the pupil's home.
(*b*) Opportunity for and extent of out-of-school experiences.
(*c*) Spare-time reading in and out of school.
(*d*) Emotional characteristics of the pupils themselves.

(*a*) The literary and cultural standards of the pupil's home were assessed with the aid of the class teachers and the head teacher. To guide the investigator in his discussions with teachers, and in the recording of information indirectly gleaned from interviews with the pupils the following particulars were listed beforehand :—

Occupation of parent or parents.
(Note if mother works also.)
Family earnings.
Number in family (ages).
Home conditions (rooms, facilities for recreation, etc.).
Interests of parents (sport, hobbies, etc., and leisure pursuits in evenings and week-ends).

Some information on home conditions was derived from the pupil's composition on " Home."

(*b*) The task of obtaining information on the extent

and variety of the pupil's out-of-school activities and experiences was somewhat easier than that relating to the culture of the home. Once rapport had been established with a child, he was usually quite willing to tell about his interests and visits, his evening pastimes and week-end activities. What impressed one more and more during this part of the study was the readiness with which most pupils chatted about themselves and their doings. The material presented a veritable mine of untapped wealth for oral and written compositions—wealth requiring no laborious digging and delving, but which could be brought to the surface with a minimum of labour and a maximum of satisfaction. Usually the discussion with the pupil was opened by the question, "Tell me what you do in the week-ends?" Then as the chat progressed the information so derived was supplemented by questions about

Hobbies (pets, gardening, stamps, etc.).
Companions.
Shopping.
Housework.
Wireless.
Visits to cinema.
Visits to friends.
Swimming or paddling.
Excursions within the neighbourhood.
Excursions outside the neighbourhood.
Holidays (when, where).
How evenings after school are spent.
Games (played, liked).
Collections made.
Things constructed.
Subjects liked at school.
Amount of travel on trams, buses, trains.
Clubs (members or visits).

(*c*) Information regarding the child's reading interest was derived partly from (*b*) and partly from the teacher. The pupil was asked about the books he had borrowed

during the past month from the school and from the county library. Class teachers also estimated the amount of reading done in school (*i.e.* when opportunities for reading presented themselves).

The results gained from the case studies, together with information from these last-named sources, enabled the investigator to tabulate in detail an accurately proportioned list of the main causes of backwardness in English composition, oral and written. Wherever possible, the significance of the causal conditions were tested by comparison of the results derived from a control group.

TABLE XXV

Causes of Specific Backwardness in Oral and Written Composition

	Backwards. N = 93.	Controls. N = 303
A. Environmental.	Percentages.	
(*a*) Poor and very poor home conditions .	38·9	12·3
(*b*) Insufficient out-of-school experiences to widen child's outlook and provide him with ideas	45·2	11·6
(*c*) Insufficient reading experiences, spare-time reading in and out of school .	36·3	19·4
(*d*) Ineffective teaching methods.		
(i) Over emphasis on mechanical aspects	28·9	...
(ii) Poor selection of topics . .	32·6	...
(iii) No incentives or audience situations .	46·8	...
(iv) Insufficient encouragement or use of positive marking . . .	55·7	...
(v) No interesting skilful development of sentence structure through concrete and activity aids . .	52·3	...
B. Intellectual.		
General weakness in verbal field.		
(i) In reading	45·2	14·2
(ii) In spelling	58·1	15·6
C. Emotional.		
(*a*) Dislike of the subject	56·8	21·7
(*b*) Temperamental qualities and emotional attitudes of the child.		
(i) Phlegmatic, slow, lacking in emotional responses . .	8·3	3·9
(ii) Lonely, solitary, sometimes inclined to extreme introversion .	25·8	6·6
(iii) Sulky, inclined to quarrel . .	9·7	6·3
(iv) Over precise and careful (limited imagination) . . .	7·1	4·6
(v) Extremely careless about details .	12·9	7·9
(vi) Lacking in concentration and persistence . . .	16·1	9·6
(vii) Emotionally unstable . .	25·8	9·2

Table XXV invites numerous inferences, but perhaps the two requiring initial consideration are those concerning the importance of the environment in written composition and the amount of correlative disability in the related verbal fields of reading and spelling. The significance of these factors is better realised if we know the levels of general intelligence of the ninety-three cases studied. If our sample had contained a large proportion of dull and backward pupils then we should find, coincident with their backwardness, a large number of adverse environmental, mental and physical conditions; but the fact that these pupils were, in the main, those with I.Q.'s above 85, eliminates, to a large extent, those proportions of adverse mental and environmental factors which are specifically connected with low general intelligence. The distribution of I.Q.'s of the selected pupils is given in the table below.

TABLE XXVI

Range of I.Q.'s of Ninety-three Pupils specifically backward in Written Composition

I.Q. Range.	No.	Percentage.
111-120	9	9·7
101-110	12	12·9
91-100	51	54·8
81-90	18	19·4
71-80	3	3·2

It will be seen that the percentage of cases below average intelligence is small. In the following paragraphs brief reference is made to the causal conditions associated with the backwardness in written composition of these ninety-three pupils.

POOR HOME CONDITIONS [1]

Almost 39 per cent. of the backward cases as compared with 12 per cent. of the controls came from poor or very

[1] The correlation ratio between cultural level of the home and ability in written composition is ·48, for which figure I am indebted to my wife's investigation into ability in the mechanics of written English.

poor homes. Analysis showed that the importance of this as a causal factor lay in the low cultural level of the home, particularly the "poor" English of the adults, their paucity of ideas and limited general knowledge. Such a verbal environment adversely influenced the development of sentence structure and grammatical accuracy, the assimilation of vocabulary and the acquisition of ideas. Where the standard of English was low, where books were few, where conversation was limited in extent and variety, and where, sometimes combined with these, much of the child's spare time was absorbed in helping in the ever difficult struggle of minding and supporting a large family, it was only to be expected that the standard of his English was meagre and the inclination to express himself fluently and correctly was diminished. Another characteristic of some of this section of the backward pupils was the inhibition they showed in expressing themselves in oral and in written English. This seemed to result when nagging or continuous petty censure by parents or other adults in the family circle was at all prevalent. With somewhat sensitive children this had the effect of causing them to inhibit normal expression whenever those in authority wished them to speak or to write. Typical of these was Lillian J., aged $10\frac{5}{12}$ (I.Q. 96), who came from a very poor home. She was badly clothed and badly shod. When asked a question she would pause until the question had been repeated several times, and would then reply (a characteristic which sometimes evoked laughter from the class). Evidence revealed that she was kept in check very much at home. Such an inhibition was with some pupils a defence reaction—the less they said or wrote the less possibility of error made and hence of censure invoked—while with others it was a form of rebellion, partly unconscious, no doubt. Interestingly enough, one heard many of these pupils conversing animatedly with their fellows in the playground; but when they were required to speak in class, or to write a composition, they revealed a most perplexing paucity of verbal power.

Finally, where the home was disorderly or lacking in

normal standards of conduct, or where impoverished feeding and loss of sleep undermined power of attention, the pupils were unable to form any systematic, properly developed attitude towards expressing their thoughts logically, connectedly and accurately. They were what most of their teachers described as, "slapdash and slovenly." They really did not bother about how they expressed themselves, partly because they had no standards of English to judge by in their homes, and partly because they were not interested. This was obvious in the case of Margaret C., one of ten children, the elder ones of whom had to help the mother in their spare time to do piece-work, cutting out, stitching, or parcelling-up garments. In the evenings the parents went out and the children were left to look after themselves.

Insufficient Out-of-School Experiences

By out-of-school experiences one means those innumerable first-hand experiences which are the basis of much verbal growth, both mechanical and imaginative. They include such sources of information as trips to other parts of the town, to nearby suburbs or towns, to a cinema or a circus, to a museum or the Zoo, excursions to places of interest like a dairy or a farm, a factory or a fire station, to a mine or a brick kiln, to a quayside or a quarry, to an aerodrome or a bus depot, and visits to the homes of playmates, friends or relatives. These first-hand experiences, with their vividness of the real, are unequalled sources of ideas and learning for all children, and cannot be adequately replaced simply by the second-hand experiences of reading or hearing about them.[1] Their real value in the development of language is, of course, greatly enhanced where parents or other adults talk to the children about the operations, mechanisms, material, incidents or people seen

[1] Out-of-school experiences of the type enumerated are less important for pupils who read widely and who obtain maximum value from a rich everyday conversation in the home.

on the trips, visits or excursions. As a result of such educational talk the vocabulary, sentence structure and ideas of the children are gradually developed and expanded. But whereas some children are fortunate to have many of these everyday educational experiences, with indirect teaching through continuous questioning, explanation, and application of the knowledge provided, others pursue a life almost barren of all these supplementary educational nutrients. It is little wonder then that differences in the levels of written and spoken English arise in pupils of even the same intellectual abilities from such different homes.

It should not be inferred from the foregoing paragraphs that such additional beneficial influences are always and only the prerogative of pupils from comparatively prosperous homes. Certainly many of the backward pupils who lacked sufficient additional first-hand experiences came from very poor homes; but there are thousands of pupils from homes that are not particularly well blessed economically, where the parents are understanding, educated people who provide for their children, without extra cost, the experiences and the associated discussions referred to above. It is the educational outlook of the parent and his understanding of child upbringing, not his weekly wage, that matter in respect to this supplementary educational experience. The essentials of the problem are aptly illustrated by the cases of two families from the same locality, whose children took part in the major investigation. Two pupils from family W——, although quite intelligent, were glaring cases of disability in English. Their parents owned a comparatively large greengrocery establishment, employing six to eight assistants, and providing a net profit of from £10 to £12 per week. The parents, however, took little real interest in their children; they provided them with plenty of money, too much in fact, but the culture of the home was poor. The children rarely moved out of the narrowly prescribed environment of their home and those of their immediate friends, and of sweet shops, cinema theatres and Woolworth's emporiums. The seaside and

the country, the aerodrome and the factory, the mine and the brick kiln, the Zoo and the museum were unknown to them. Their parents had no time to bother about such things, for they were either too busy making money at their shop or equally busy spending it at the pictures, dog meetings or races. On the other hand, two of five children of a nearby council employee, earning £3, 14s. 6d. a week, although of slightly less intelligence, were three to four mental years ahead in level of English of the pupils from family W——. The father of the pupils in family P—— took his elder children out for cheap tram and bus rides to places of interest in and around London. He talked to them about birds and their ways, and about the different kinds of flowers and trees, he helped them with their gardens, took them to the Zoo and museum, to the aerodrome and the bottling depot of the dairy company, and indirectly aided them in that vital development of vocabulary, sentence structure and general knowledge which accrues from a comparatively rich reservoir of first-hand experiences of a varied kind.

Sometimes circumstances, other than monetary or cultural, produce paucity of first-hand experiences for a child. One of my most pronounced cases of special disability in English came from a relatively good home where the father was a night worker on the railways. In consequence of this the day activities of the home were not normal, and the girl in question rarely went anywhere, saw anything of interest, or pursued the experiences of normal children. Most of her time was spent inside the house in reading and being quiet. As with most cases of backwardness, there were several causal conditions, for combined with this lack of out-of-school experiences were certain emotional characteristics which tended to accentuate greatly the particular shortcomings of the home.

General Weakness in Verbal Subjects

The extent of correlative weakness in reading and in spelling is shown by the magnitude of the figures in

Table XXV—45 per cent. of the cases of composition disability were backward in reading and 58 per cent. were backward in spelling. The existence in some children of this conjoint disability in the entire verbal field has long been recognised. So persistent is it in some families that certain investigators have been tempted to postulate an inherited weakness in those mental abilities which are necessary for normal progress in reading, spelling and written English. While my investigations in reading and spelling would not lead me to deny such an explanation, yet in written and spoken English the weight of my accumulated evidence is contrary to the acceptance of such an innate or congenital causal connection. It must be admitted that a child weak in reading because of an innate mental weakness, such as delayed maturation in visual perception of word patterns, is often weak in written English, and so may be considered as an example of backwardness which arises indirectly from causes of an innate kind. But where reading ability is normal, weakness in oral or written English is nearly always due to a combination of environmental and emotional factors. There is undeniable evidence to show that as cultural conditions or specific emotional attitudes [1] improve so ability in English improves. The usual position with intelligent pupils of this group is that they are good at reading, but somewhat weak at spelling; and although improvement in cultural experiences brings a comparatively rapid improvement in written English (in which errors in usage and construction can be eliminated by careful, directed thought), yet in oral English old faults such as "He done," "The one what I lost" still persist. Spelling ability is often the last to be brought up to normal standard. Normal reading ability does not necessarily mean normal ability in oral and written English, although weakness in reading almost invariably produces poor English. We are thus disposed to ask,

[1] See pp. 357-361 for evidence of a case where improved specific emotional attitudes brought improvement in oral and written English.

"What exactly is the influence of reading ability on oral and written English?" In the initial stages of scholastic experience the connection is fairly obvious. The pattern of the simple sentence in its written form is largely assimilated from the patterns which the child experiences so repeatedly in his early reading. In fact, with very backward children it is practically useless to give them lessons in written English until they can read. All their English lessons should be reading lessons, and even after some progress has been made the relation between reading and writing English must be very close. Beyond a reading age of nine the dependence of written English on reading begins to decrease—real experiences, social contacts, imaginative powers all begin to exert a greater influence. But although this dependence of composition on the mechanics of reading —on basic word recognition and on the form of the simple sentence—decrease somewhat after nine, yet other influences remain. The most important of these is the assimilation of vocabulary—the repeated contact with words in their varied context leads to their gradual incorporation into the meaning vocabulary (*i.e.* the words of which they understand the meaning) and later the writing vocabulary (*i.e.* the words they use in writing) of the pupils. The importance of the vocabulary factor on all verbal activities, scholastic and everyday, cannot be overestimated. The wide reader usually acquires a fairly wide meaning vocabulary, which helps him in reading comprehension, in oral expression and in written English. This acquisition is doubly valuable since it seems to arise as much through unconscious as through conscious effort.

This unconscious assimilation does not, however, operate with the same potency on the subtler characteristics of sentence structure. Here, as with spelling, there must be more conscious, directed mental effort if benefit is to accrue from the reading material. Unless supplementary linguistic experience of a planned kind is provided, some children do not make very marked improvement in sentence structure, English usage and spelling simply through reading. There

are, for example, intelligent children who read widely and often, but whose sentence structure, logical development and spelling remain definitely weak. This is due to the very rapid and emotionalised nature of their reading. For them speed and excitement so command the situation in the stories they read that there is a neglible assimilation, either conscious or unconscious, of the literary characteristics of the material.

The experimental findings of the foregoing paragraphs find confirmation in the statistical evidence of the following table [1] :—

TABLE XXVII

Observed Correlations of Scores in Composition, Vocabulary, Sentence Structure, English Usage, Reading Comprehension, Spelling and Amount of Reading done (119 boys, 12-13 years)

	Comp.	Vocab.	S.S.	Eng. U.	Rdg. C.	Spell.	Rdg. Done.
Composition .	...	0·54	0·52	0·45	0·50	0·48	0·33
Vocabulary . .	0·54	...	0·63	0·70	0·71	0·71	0·53
Sentence Structure	0·52	0·63	...	0·55	0·54	0·64	0·35
English Usage .	0·45	0·70	0·55	...	0·66	0·59	0·34
Reading Comp. .	0·50	0·71	0·54	0·66	...	0·65	0·48
Spelling . .	0·48	0·71	0·64	0·59	0·65	...	0·41
Reading done .	0·33	0·53	0·35	0·34	0·48	0·41	...

Extent of the pupil's vocabulary shows consistently high correlations with all the elements contributing towards ability in written composition. In general, amount of reading done shows the lowest correlations with the other measures. The importance of reading comprehension and spelling, vocabulary, sentence structure and correctness of English usage is borne out by the table. The relative values of directed purposive reading, as indicated by reading comprehension and of the amount of reading done

[1] I am indebted to my wife for this table. For a fuller consideration of the correlations together with a factor analysis of the measures and the relative importance of intelligence and pertinent emotional factors such as extroversion, talkativeness, thoroughness, emotional excitability, the reader is referred to *An Experimental Investigation of Diagnostic Tests in English*, by F. Eleanor Schonell, M.A., Thesis in the University of London Library.

by pupils, are significant. The average correlation between reading comprehension and other variables in the table is 0·61, while the average between reading done and other variables is only 0·39. For the teacher the correlations of composition and reading comprehension ($r = 0{\cdot}50$) and amount of reading done ($r = 0{\cdot}33$), of vocabulary with reading comprehension ($r = 0{\cdot}71$) and with amount of reading done ($r = 0{\cdot}53$) would seem to further strengthen the claim for additional motivated silent reading as an aid to development of written English.

Emotional Characteristics of Pupils and their Relation to Disability in Composition

Since oral and written English are forms of expression intimately connected with the entire personality of the pupil, it is not surprising to find that there is a very close connection between the temperamental and the emotional attitudes of pupils and the nature of their oral and written English. And where the temperamental or the emotional life of a pupil exerts an inhibitory influence on his attitudes towards his companions, his school work and his own capabilities, then there is a distinct possibility of this influence causing difficulties in his oral and/or written English.

With a group of backward pupils in the present investigation there appeared to be two sets of emotional influences connected with the two aspects of English, the mechanical and the creative. There were certain emotional attitudes associated with weakness in the structural aspects of oral and written English, and others which seemed to interfere with normal expression on the content side, particularly in the extent and variety of ideas and in the imagination shown in the written or spoken material.

The emotional barriers to normal expression in the content or thought aspects of oral or written English were :

(*a*) A phlegmatic, unresponsive temperament.
(*b*) A lonely, solitary form of social behaviour, sometimes with accompanying introversion.

(*c*) A tendency to sulkiness and quarrelling.
(*d*) An over-precise, pedantic attitude of extreme carefulness.

The phlegmatic, placid, unresponsive type of intelligent pupil not infrequently wrote correct English, but his efforts were markedly lacking in extent, variety and interest of information communicated. The paucity of the ideas expressed, the mundaneness of the thought involved and even the quantity of the material produced, seemed to be a mirror of the writer's placidity and absence of emotional range. These pupils showed that without feeling there can be little convincing expression. Sometimes these characteristics arose from an innate temperamental quality of the pupil—he seemed incapable of experiencing the full strength of the finer emotional states. In other cases it was the product of the parsimonious, prohibitive, humdrum atmosphere of the pupil's home. In a few instances the parents seemed to derive pleasure from being dull and joyless, in denying themselves simple pleasures and the stimulating emotions associated with these stabilising experiences. And these adverse emotional attitudes tended to transfer to the children.

Remedial teaching showed that it was difficult to improve the oral and written expression of these pupils; what did most good was to induce them to participate in vital experiences of an emotional kind. By encouragement and subtle planning they were led to give short talks to the class on prepared subjects, to take part in dramatisation, to make week-end excursions in company with other class members to selected places and institutions, and to attend certain films. Careful selection of oral and written composition topics based on these experiences produced improved results. Solitariness, extreme introversion and allied emotional attitudes which tended to deprive the pupils of the full and far-reaching effects of social contacts had a most marked effect upon powers of oral and written composition. The effect of mixing and

talking freely with others, on the acquisition of new ideas, the assimilation of vocabulary, and moreover on the desire to communicate one's thoughts to others, is clearly seen when we become aware of the retardation and limitations in verbal growth of those pupils who tend to withdraw from normal social contacts. Such pupils make few efforts at spontaneous conversation, they seem disinclined to talk and are ill at ease if they are asked to write their thoughts on paper. Whether it is their solitary retiring nature which inhibits them from speaking and writing freely, or whether the lack of a variety of human contacts has deprived them of the richest source of information it is difficult to determine —no doubt something of both operates in their cases.

Evidence of the effects of several emotional influences on oral and written English is best understood if we cite a concrete case. Annie W., aged 15, whose English was markedly inferior to her other school attainments, had gained entrance from her elementary school to the secondary department of a girls' school of six hundred pupils. She was a large, heavily built, rather gawky and ungainly girl, who had worn glasses since the age of three. At a recent examination by a school doctor she was told that she had a lazy eye, and that her eyesight was too bad for her ever to satisfy her desire of becoming a teacher.

The home is well kept by her mother for their family of five, which includes a sister aged 7 and a brother aged 22. The father is a railway clerk engaged in night work from 10 P.M. to 6 A.M., while the brother, who had previously won a scholarship to a nearby secondary school, is in a shipping office. The brother is fond of music, plays the piano very well, and is a member of a voluntary concert party, which gives concerts at institutions. The brother likes Annie, but as he spends his spare time playing the piano at home or out with his concert party, there is little real contact between them. Annie has a sister of seven, with whom she was at first quite pleased, saying that she wanted a sister, but she takes very little interest in her now.

At school Annie is taking English, History, Latin,

French, Arithmetic, Algebra, Geometry, Biology and Drawing. Her work is excellent except in English, as the following psychograph shows.

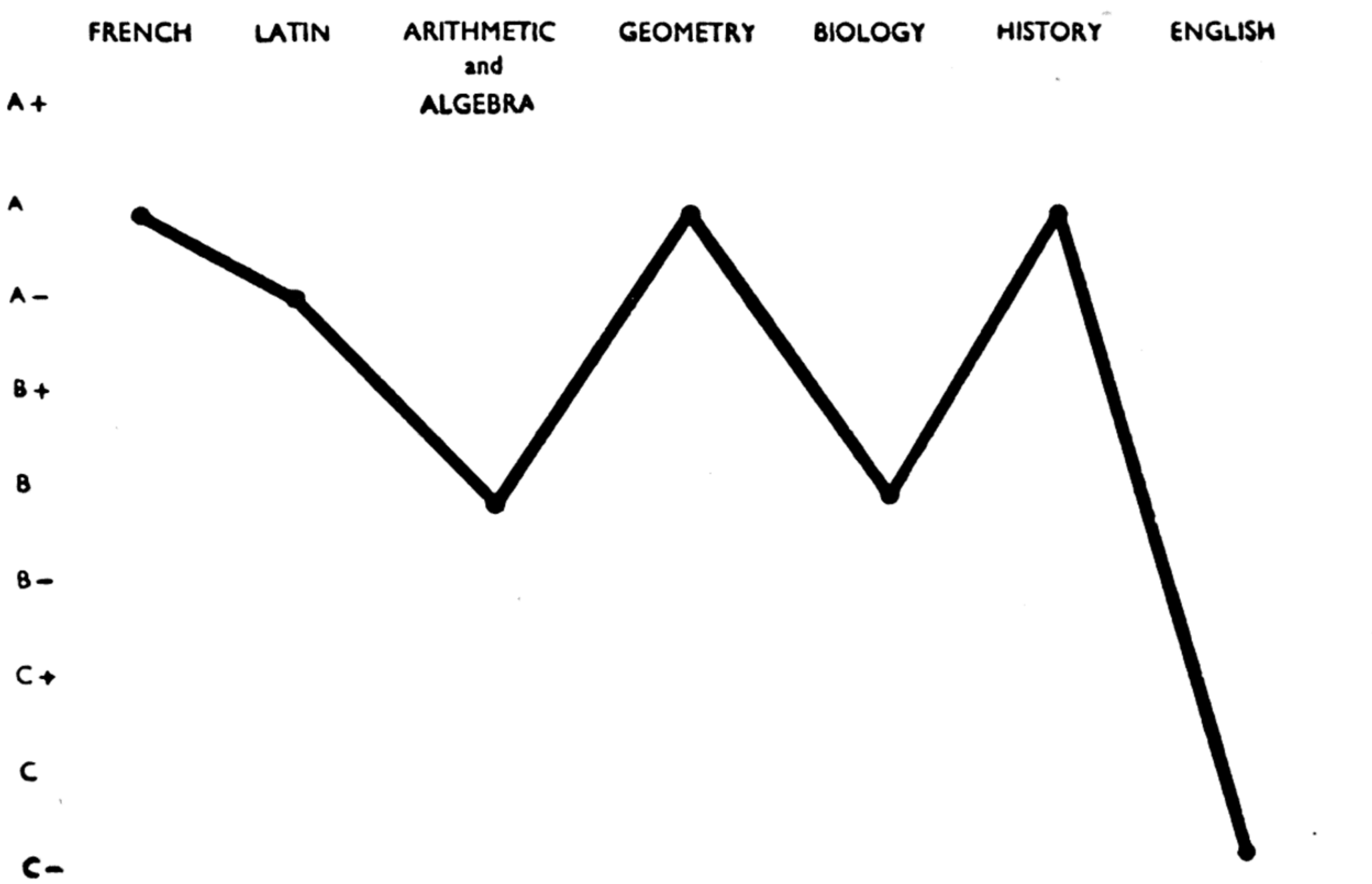


FIG. 8.—Psychograph of Educational Levels of Pupil specifically backward in English. (Case, Annie W., age 15·6 ; I.Q. 125.)

Her preferences for the various subjects are as follows :— History 1, Latin 2, Mathematics 3, Biology 4, English 5, French 6. Although she does well at French she intensely dislikes the oral work in this subject, and is extremely self-conscious of speaking in front of other members of the class. It is interesting to note that she likes bookbinding, but her poor powers of co-ordination are responsible for a very low level in this activity. The same factor, together with her ungainly size, cause her to make almost ludicrous efforts at gymnastics.

Her teachers say that in class Annie rarely speaks, and does not answer more than a total of two questions in all classes in a week.

In temperament Annie is lethargic ; and although she appears emotionally apathetic, neither showing strong joys nor sorrows, there is below this outward appearance of passivity a strong sense of solitariness, a feeling of discontent,

and an intense far-reaching idea of inferiority. Her size [1] and her looks underlie this sense of inferiority, and in turn cause her to shrink from society. She is retiring, reticent about speaking, and dislikes making contact with new people. (Both her class mistress and the head teacher said that she was not told of my initial visit beforehand, otherwise she would have stayed at home.) Her mother describes her as " hard, discontented, disobedient and silent." She does not mix with other girls ; occasionally she stands near a group of girls, listening, but rarely entering into the conversation herself.

In all my talks with her, in which I was able to cover a fairly wide field of interests, her responses were very largely negative. She does her homework well and wants to obtain the General School Certificate, but does not know why she wants to pass this examination. She does not like flowers or nature, children or pets. She is not interested in her appearance, and until recently was extremely untidy and slovenly. She has no strong attachments to members of her family, and has no companion of whom she is fond. Her only friend is a girl of fourteen, who lives next door and works in a drapery shop. When asked what she would do if she were given £100 she had no ideas whatsoever.

She likes reading, particularly true animal stories, and is emotionally aroused on the very rare visits she makes to an aunt by the sea. She likes listening to concerts, but has little opportunity of gratifying this desire. She has no vocational wishes, except that at one time she wanted to become a teacher. Now she would rather " work somewhere doing figures."

Further conversation with Annie revealed that home conditions tended to accentuate Annie's emotional difficulties and social shrinking. She rarely went out or made visits of interest, attended cinemas or concerts. There was no wireless in the house and Annie did not invite any friends to her home. The idea of " keeping quiet " during

[1] Height 5 feet 10 inches ; weight 10 stones 7 lb.

the day influenced her home life and to some extent produced her feeling of discontent. In not following the usual activities of other children of her age, without friends and lacking in normal social contacts, Annie is deprived of a basis for natural conversation and hence tends to isolate herself.

All this is reflected in her attitude in written and spoken English. She " hates " writing essays, dislikes paraphrasing or précis work, vocabulary studies and grammar, and would sooner suffer pain or punishment than talk in class in front of other pupils. Annie confided to me that she liked plays and would have liked playing in them. When she was asked to write a composition on " Home," she quite naturally wrote nothing at all. A request for her thoughts on " If I had wings and could fly, what should I do," brought only this :

> " If I had wings and could fly I should visit places in the British Isles which are famous for various things and which I had not already visited. I should also visit foreign countries."

Other topics produced at best ten or twelve lines.

The case study reveals the far-reaching and intense effects on oral and written English of a number of unfavourable emotional attitudes, which when acting conjointly can almost paralyse expression in these fields. The detailed study also reveals the need for a partial dissipation of those forces producing the adverse emotional attitudes if an improvement in English is to be effected. In the particular case discussed above, the first and obvious course was to provide Annie with more of the everyday experiences of normal children of her age. Her mother was asked to encourage her to go out more with other children, and to bring home an occasional friend to meals. Her class teachers volunteered to take her on visits to places of interest. In addition, her brother was asked to talk with her and to take her to a concert now and then. Gradually Annie began to talk to other people and to take a little more pride in

her personal appearance. Annie's teachers were asked to embark on a policy of liberal praise, and to do all they could to help to overcome her feeling of inferiority about her size and her looks. For example, she was given extra coaching in gymnastics and was taught to swim. She was encouraged to continue her interest in plays and was given short parts to read during class dramatisations. As her interests grew, her knowledge extended, and her self-confidence returned, so her desire to express herself both orally and in writing improved considerably. She would converse much more readily and with a certain amount of fluency and vigour, particularly when she was talking about a visit recently made. As the inhibitions of inferiority, solitariness and discontent disappeared, so the harmony of her emotional life was re-established.

Her level in English rose steadily and she finally obtained a pass in her General School Certificate.

Emotional Influences on Structural Aspects of English

The emotional characteristics which mostly impede progress in the structural or mechanical elements of written English are threefold :

(*a*) An extremely careless attitude with respect to language details in general.
(*b*) A lack of persistence and concentration.
(*c*) A certain degree of emotional stability.

The present investigation showed that to a large extent these three conditions were associated. Many of the cases whose written English was very weak on the structural and mechanical side showed all three of the above characteristics. Most of them were intelligent children whose imaginative powers were good, but whose ability to conform to correctness of grammar, punctuation or structure was decidedly weak. Thus Phyllis H., aged $9\frac{4}{12}$ (I.Q. 118), a jumpy,

excitable child with a slight squint, but with a very attractive disposition, included interesting material in her compositions, but simply rambled on with a continuity of "ands" and "thens," while commas and full-stops were rarely used. Mary L., aged $10\frac{4}{12}$ (I.Q. 110), was a talkative, ebullient type whose flightiness was the cause of her poor powers of concentration and persistence. In her composition on "Home" she wrote 328 words—in quantity much in excess of her age-group, but in quality much below. Her work consisted of a succession of simple sentences, or numerous sentences joined by "and," "then" and "but." The writing and sequence of her composition was much below a 10-year-old standard; but the information she conveyed was comprehensive and interesting.

In general, both the oral and written English of these pupils was a reflection of their emotional life. The excitable, staccato, discontinuous expression of their feelings produced a certain lack of order, precision and concentration in their work. Their intelligence was sufficient to ensure a satisfactory development in the content and vocabulary elements of their English, but their somewhat unequal emotional equipment led to a weakness in those elements, where order, continuity and detail are required.

This short review of causal factors of disability in oral and written English has served to emphasise what was indicated in the opening of the chapter, namely, that expression in oral and written English is intimately connected with the entire life of the pupil.[1] It is an expression of personality which is built not only on his intellectual life, but also upon his emotional and environmental life. To produce freedom and facility in English we need to look not only at the scholastic and intellectual operations

[1] The study has also indicated the possible value of oral and written English as an instrument for diagnosing personality characteristics. Little investigation of psychological merit has been done along this suggestive line of enquiry, yet a careful statistical study of both content and method of expression in oral and written English would, I feel, prove most fruitful in the difficult field of personality analysis.

involved, but at the whole question of experiences and emotional harmony.[1] And hence to help those intelligent pupils whose English is much below level we must consider not only intellectual abilities but possible shortcomings in experiences and barriers in emotional life.

[1] The English curriculum for the secondary modern (senior) school has been considered most effectively by Miss M. P. Laurence in her recent book *Citizenship through English* (Oliver and Boyd Ltd., 1945). Miss Laurence shows how teachers can plan the English curriculum for pupils 11 to 15 to provide activities for both the development of personality and preparation for citizenship. In considering the needs of the pupils both as individuals and as members of society, she gives many excellent practical suggestions relating to the use of the radio, the film and the newspaper as a basis for oral and written English. She shows how we can direct pupils towards the formation of acceptable standards in relation to radio and screen, how we can assist the development of a critical appraisal of newspaper articles, how we can awaken real interest in English studies and how we can lay the foundations for out of school interests in dramatic work, reading, choral work and poetry. The book is a direct break with the old, formal "dry as dust" type of English teaching which pupils disliked and which was so ineffective as training for after-school life. It is particularly useful to all teachers of less able children between the ages of 11 and 15 years.

CHAPTER XVII

ATTAINMENT LEVELS AND AGE-GROUP CHARACTERISTICS IN WRITTEN COMPOSITION

NOTHING is more pertinent to a consideration of ability in English composition than a clear idea of what should be regarded as average accomplishments for pupils of different mental ages. It is evident that English composition has both qualitative and quantitative aspects—a fact which makes aims and assessments difficult but doubly important for teaching purposes.

VALUES OF ATTAINMENT STANDARDS

It is imperative that we should know what to expect in written and spoken English from pupils of particular mental levels in order that our teaching should have direction and efficiency. We should know what characteristics of their work are definite merits or weaknesses for their age, what common errors we can expect to eliminate by practice, and what faults will tend to right themselves simply through experience and maturation. We should know, too, what are the specific difficulties underlying different forms of composition—reproductive, narrative, imaginative and explanatory—and what are the characteristics of progress from age-group to age-group.

As such knowledge is only revealed after a careful consideration of many themes from a large number of pupils, it is natural that the class teacher should not be expected to undertake the task of gathering together this information in a systematic form. The material can, however, come as a contribution from the educational psychologist. Nor is it expected that the median samples of compositions, the catalogue of errors and the schedules of characteristics thus compiled should be regarded as

rules to be observed or standards with which to be satisfied ; they merely indicate general trends and common characteristics from average age-group samples of the school population. It is, however, a conclusion of the present investigation, checked under classroom conditions, that where there is acquaintance with details of average age-group attainments in various types of composition and with particulars of progress from age to age, there the course in oral and written English possesses both purpose and precision and the standards set for individual children are not unduly high.

This latter point is extremely important in the early stages of expression through the spoken and written word, for nothing causes more discouragement, both to teacher and pupil, than an erroneous or vague idea of standards to be attained. Not infrequently teachers will, even when pupils are working up to their mental levels in English, depreciate and correct their work when praise and other incentives would have a decidedly better influence on future efforts. Often these unduly high aims and fruitless alterations are made in ignorance of what can legitimately be expected of children at various stages of mental development. Too often teachers who lack pupil standards by which to assess the English of their class, are inclined to judge from the viewpoint of an educated adult's English. The assessors are too conscious of the immense gap between the pupils' standards and those to which they ultimately want them to attain.

Our own maturity and, at times, our enthusiasm for improvement prompt us to rush the child along at an unnatural pace. We are inclined to forget that he is capable of reflection and that within the limits of his experience he can reason quite well. We are tempted in our teaching to stuff him all too quickly with ideas, rules and drills designed to bring him to this adult standard, forgetting that there are periods of consolidation when learning is proceeding at deeper levels of the mind and observable improvement is in abeyance. Nature makes

provision for experimental learning through activity and fantasy ; and of this we should take full advantage. The danger of overriding the child's natural rate of mental development in English, or of failing to provide sufficient opportunity for its growth through directly and indirectly derived experiences is minimised to some extent by knowing the nature of his thought as manifested in various themes at different age-levels. By this means we realise that the child should develop his ability in English slowly and progressively through practice, through widening experiences and maturation of mental powers. This does not mean that teachers should decrease their efforts for improvement in the written and spoken English of their pupils, but it attracts attention to four points. Firstly, as varied experiences as possible should be provided for the pupils. Secondly, pupils learn to write by writing. Studies in words, English exercises, and simple grammar are only useful supplements, never substitutes for writing. Thirdly, confidence and encouragement should play an important part in creative expressional activity. Fourthly, a clear idea of the mechanical stage which a child can be expected to reach at a certain age lessens the soul-destroying emphasis upon technique and allows teachers to see imaginative excellencies in compositions which reach normal form. Furthermore, it prompts teachers to foster imagination and not to clog up, with over-insistence upon mechanics, a channel which provides for expression of the deeper self.

Method of obtaining Attainment Standards

To obtain median attainments in different types of compositions for different age-groups, every pupil in a representative sample of elementary school children (approximately 1300) was asked to write four different compositions. The age range of the testees was from 7 to 14 years. All 7-year-olds in the infant department wrote compositions, and their products were considered in conjunction with those of 7-year-olds already promoted to

the junior school, thus providing a normal sampling of pupils aged 7·0 to 7·11 years. Similarly, at the upper age ranges of 11, 12 and 13 years a full normal sample, complete in intellectual range, was obtained by adding a correct proportion of pupils aged 11+ to 13+ years, who had been promoted to either Selective Central Schools or Secondary Schools.

Topics.—The major objective of the investigation was to obtain details of thought content, sentence structure and mechanical elements for four different types of composition for each of the age groups 7 to 13+ years. Types of composition were classified as (*a*) reproduction of a story, (*b*) narrative-descriptive, (*c*) imaginative (*d*) explanatory, or expository.[1] The subjects were representative of each type and were carefully chosen on the basis of familiarity and universality of appeal for children of different social conditions. They were as follows :—

A. Reproduction of a story : The story of " Urashima, The Fisher Boy."
B. Narrative-descriptive : " Home."
C. Imaginative : " If you had wings and could fly, tell what you would do."
D. Explanatory : " How to play ——" (any *one* game).

The prose selected for Topic A, " *Urashima, The Fisher Boy,*" possessed the merits of being an interesting story with a well-ordered, fairly rapid sequence of events and a corresponding richness of detail.

Topic B, " *Home,*" linked as it was with the everyday experiences of every child, provided a wealth of ideas through which all testees expressed themselves with interest and ease, if not always with variety and accuracy.

[1] All classifications of the different kinds of written English must of necessity be somewhat arbitrary, and the various types enumerated must have some degree of overlap with each other. For example, some writers include a separate descriptive type, but it must be admitted that description enters into all types of writing, while the purely descriptive type of written composition in the elementary school is rare. To some extent this is also true of the narrative form of writing. For these reasons I have chosen to call one type of composition narrative-descriptive.

Topic C, " *If you had wings and could fly . . .*" gave wide scope to imaginative powers, and the resulting range of ideas proved that as a test of imaginative fertility the topic was a pronounced success.

Topic D, " *How to play* ——," yielded abundant material of unlimited variety from which to judge the difficulties besetting children when they embark on explanatory or expository writing.

Teachers will readily recognise that the order of topics here given follows the order of difficulty for pupils—a reproductive composition is the easiest, while an explanatory one is the hardest with the narrative-descriptive and imaginative types fitting into second and third positions respectively.[1]

Instructions.—All pupils wrote the four different compositions in the above order on four different days. Few specific directions were formulated ; the title was written on the blackboard and the time limit was announced. A warning was given five minutes before the end. Pupils of seven and eight were allowed to write in pencil. No remarks were made ; no injunctions given ; no suggestions put forward ; no questions answered and no words spelled—any and all of which procedures can, if not strictly observed, distract the child from his own ideas to those of other people.[2]

Only in the case of " How to play —— " were explanations made ; then pupils were told to select *any* game they liked and to write about it. They were to write on only *one* game.

[1] The possible exception to this order would appear to be the explanatory type of writing based directly on some activity performed or witnessed by the pupils. For example, relatively young children and also backward pupils can recount fairly accurately the steps in such activities as making a cup of tea, lighting a fire, planting seeds, washing dishes.

[2] An excellent example of this was provided when one class teacher thought that she should preface the exercise of writing for half an hour on " Home " by a few remarks to the pupils. " It does not matter," she said, " what your home is like. It is the people in it that matter." " It doesn't matter how poor your home is. It is the way you act and what you do that counts." The result was that most of the children in the class introduced similar ideas into their compositions : " It doesn't matter how poor your home is, it's whether you are happy or not, etc. . . ." Their own ideas and creative ability had been thereby obstructed and thwarted.

With the reproductive composition the story was read *once* by the teacher, deliberately and slowly, care being taken to emphasise the sequence of events and details and to throw up the images that rose naturally in connection with them.[1]

The story was reproduced directly after the reading. The *time limit* for each composition was *thirty minutes*. This figure may seem arbitrary, particularly as some young testees will set down all they know about a subject in half the time, while others not much older could continue for three-quarters of an hour or more. But all time limits in expressional exercises are to some extent arbitrary. Such tests differ greatly from those in arithmetic, spelling, reading, or even geography and history, in which speed and quantity have greater value. In English composition the voluminous writer is not necessarily the best writer, nor is the production of a very slow thinker necessarily inferior. One can obtain in half an hour's written English from children a very true sample of their power of thought and accuracy of diction.

Marking.—The compositions, over 5000 in number, were first separated into the various age groups, 7 to 13 years, and were then marked one topic at a time, by the author and an assistant, experienced in teaching and testing. In marking, the influence of subjective factors was minimised by the use of a schedule of ten points.[2]

A maximum of twenty-five marks was allowed for each composition, and during the marking the following distribution of the marks was kept in mind :—

Content of composition	. .	12 marks
Structure of composition	. .	7 ,,
Mechanical elements	. .	6 ,,

Naturally, in an explanatory or expository type of composition, the balance of 12, 7, 6 marks for Sections

[1] The best advice to be given in this respect is : "See the scenes as you read the words. Look at them intently in your own mental vision, and pause at each completed picture." G. H. Thomson, *Instinct Intelligence and Character*, p. 91 (Allen and Unwin).

[2] Details of the ten-point schedule are given on p. 484, Chapter XVIII.

A, B, C requires some modification. The important features to be kept in mind in an explanatory type are :

1. Clarity and continuity of thought.
2. Logical structure.
3. Conciseness and effectiveness of description.

Quantitative as well as qualitative measures were obtained, and of these the most important were the average number of words written in thirty minutes by pupils of different age groups in each of the four types of composition, and particulars of sentence structure at different age levels.

Although quantitative aspects of written English are not a completely reliable measure of ability in composition, yet these can be the starting point of fruitful suggestions concerning both material and methods. Not the least useful of these quantitative aspects is the amount written. Accordingly, the total number of words written by all members in each age group for each type of composition was obtained and the averages calculated. The results are given below in Table XXVIII and shown graphically in Fig. 9.

TABLE XXVIII

Average Number of Words written in Thirty Minutes in Four Different Types of Compositions

Ages.	No. of Cases.	Number of Words written in 30 minutes.			
		(*a*) Reproductive "Urashima."	(*b*) Narrative "Home."	(*c*) Imaginative "Wings."	(*d*) Explanatory "Game."
7	459	35	34	25	30
8	599	104	86	84	66
9	642	149	120	126	102
10	632	198	158	163	139
11	612	236	188	181	159
12	608	276	205	191	178
13	578	301	225	205	199

Deviations from these averages are considerable and indicate the large range of achievement on this quantitative side. In general, boys write a little less than

these figures would suggest, while girls on the whole write a little more. The averages simply represent trends from age group to age group with respect to different types of writing. Although they cannot, in any sense, be regarded as fixed norms of achievement, yet they do reveal certain marked and indisputable facts. The chief of these are :

(i) The superiority from a quantitative standard of the reproductive composition.
(ii) The appeal of the imaginative composition to age groups 9 and 10.
(iii) The universal decrease with all groups in the amount written in an explanatory type of composition.

These and other possible inferences from the table require verification with larger numbers of testees.

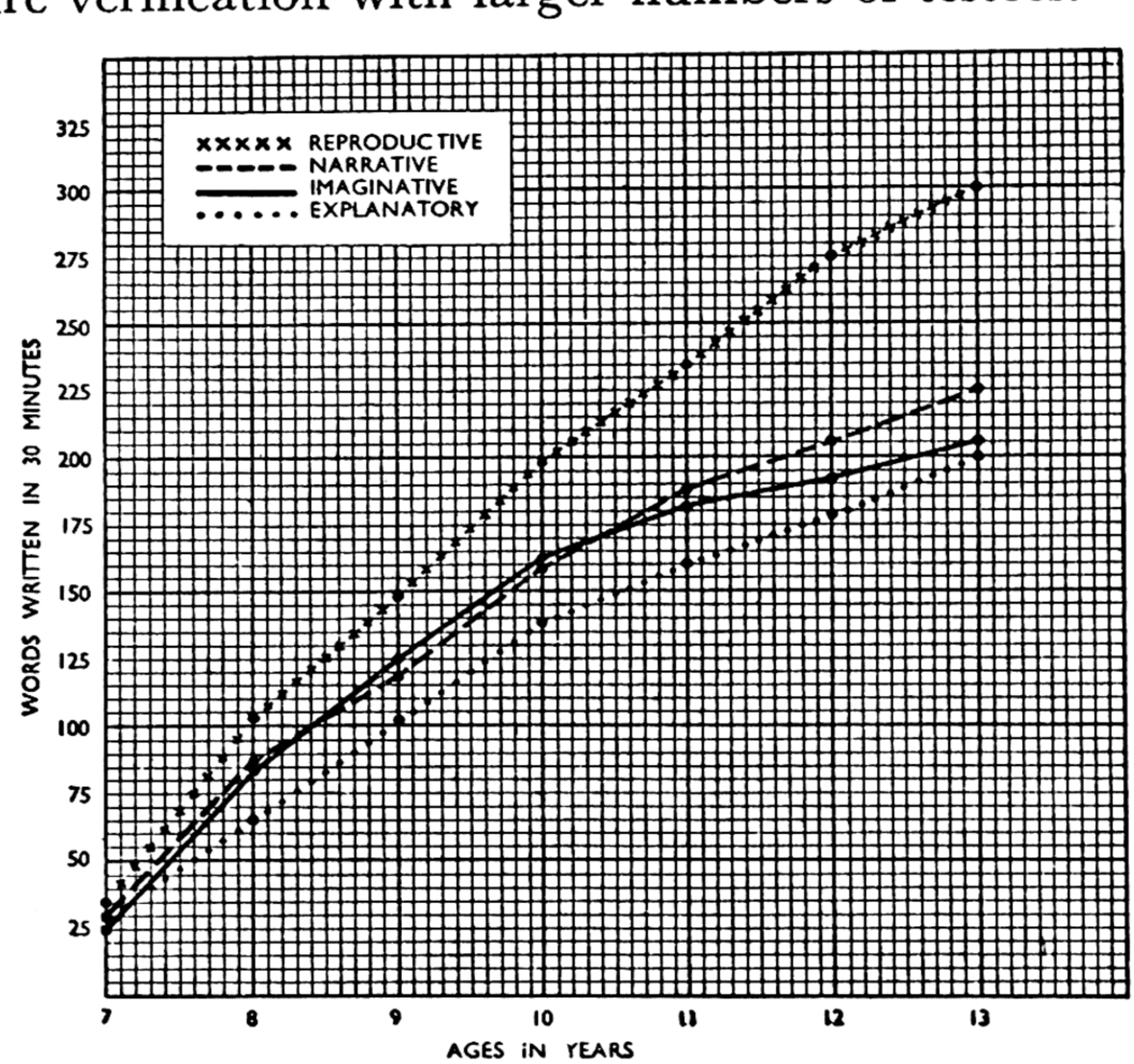


FIG. 9.—Diagram to show Average Number of Words written in Thirty Minutes by Pupils 7+ to 13+ in Four Different Types of Compositions.

It will be noted from the results that the topics upon which 7-year-olds write most are "Home," and

"Urashima." The average number of words written is slightly more than those written on the other two subjects, a fact which suggests that for young pupils of 6, 7 and 8, and for dull ones up to the age of 10, much of their written English should centre round familiar experiences and short, simple stories.

The imaginative type of composition is not suitable to pupils of 7 to 8 years.

The marked qualitative superiority of the reproductive type of composition is apparent at all ages, while the "slowing up" effect of an explanatory type is shown by the figures.

Qualitative Aspects

(1) *Selection of Median Attainment Specimens.*—When all the compositions had been marked they were arranged in order of merit within each age group from 7 to 13 years for each of the four types of composition. Ten compositions in the median section were then analysed on the basis of content, structure and mechanical elements (see above). Particular reference was made to sentence structure—length, variety, conjunction, and the way in which several sentences were joined—as this is perhaps the best single criterion for judging levels in written composition. Finally, specimens representative of median attainment levels for age groups 7-8, 8-9, 9-10, 10-11, 11-12, 12-13 and 13-14 were selected. The selected compositions thus represented composition ages of $7\frac{1}{2}$, $8\frac{1}{2}$, $9\frac{1}{2}$, $10\frac{1}{2}$, $11\frac{1}{2}$, $12\frac{1}{2}$ and $13\frac{1}{2}$ years for each of four types of theme. These are reproduced in the body of the text at the beginning of the section in which each type of composition is discussed.

The method of median samples given in terms of composition ages was preferred to a numerical scale for composition specimens. My own experience, together with the opinions of teachers with whom I have discussed the problem of the use of Burt's median samples for the composition on "School," [1] as compared with composition

[1] *Mental and Scholastic Tests*, pp. 330-335, and Appendices II and III.

scales on which each composition is given a score, is that for practical classroom purposes the median sample of age attainment levels is more suggestive than compositions with numerical scores, which can be translated into mental ages.

The idea of a median sample is direct and simple, and fits in with the conception that the teacher is always using. Some guidance is, however, necessary as to the characteristics of compositions on which to base comparison between his pupil's work and the median samples. In this respect two points of major importance stand out. He should keep a just proportion between the creative and the mechanical aspects of written work. (Here the schedule of points with 12 marks for content and 6 for mechanical elements helps considerably), and he should always take full note of sentence structure and vocabulary. Finally, he should remember that median samples are not standards to be aimed at, but rather carefully selected specimens which can assist him in planning for teaching and assessing written English.

(2) *Characteristics of Progress in Written English.*—After all the compositions had been marked and median samples had been selected, the material was entirely re-read and notes were compiled on the progress made as children mature intellectually. This analysis emphasised, even more than did the actual marking, the wide range in each age group of quantity and quality in written English. Even with younger pupils this variation was pronounced. For example, amongst 8-year-olds, one child wrote 206 words in thirty minutes, while another only managed to produce a disjointed effort of 22 words. These wide variations in each age group make it difficult to describe, with exactitude, characteristics of development from age to age. But if we keep in mind the concept of *mental* age there are, in general, fairly well-marked stages of progress in written English between the mental ages of 7 and 13. These stages range from the simple, somewhat discontinuous, staccato statements of the 7- to 8-year-old mental level to the more carefully developed 13- to 14-year-

old theme with longer sentences, fewer mechanical errors and considerable abstraction and generalisation. Brief reference to these general characteristics of progress is made as each type of composition is considered.

A. Compositions based on the Reproduction of a Story

The prose used as the basis for this type of composition is reproduced below. The copy will aid readers in understanding the contents of this section and will be useful to teachers desirous of obtaining compositions for comparison. For pupils of 7+, 8+ and 9+ years it is advisable to read the shortened form of the story, as at these ages, if stories are to be directly used for developing written English they should have a limited number of ideas, simple development of action and clear, concise details and descriptions.[1]

Schedule G. Story for Reproductive Composition

Urashima, the Fisher Boy

Long ago there lived on the sea coast of Japan a young fisherman named Urashima. One day he went out in his boat to fish, but instead of catching any fish he landed a big tortoise with a hard shell, a wrinkled old face and a tiny tail. Now tortoises as you know live for hundreds of years.

Urashima thought to himself, " A fish would do for my dinner just as well as this tortoise—in fact better. Why should I kill the poor thing and prevent it from enjoying itself for many more years? No, I won't be so cruel." And with these words he threw the tortoise back into the sea.

The next thing that happened was that Urashima went

[1] It cannot be too strongly emphasised that for all backward children stories intended for oral or written reproduction must be considerably shorter than the one used above. Here the story (with modification) was used to determine the characteristics and difficulties of pupils ranging in ages from 7+ to 14 in this kind of writing.

to sleep in his boat, for it was one of those hot afternoons when almost everybody enjoys a nap. As he slept there came up from beneath the waves a beautiful girl who climbed into the boat and said, " I am the daughter of the Sea-God, and I live with my father in a Palace beyond the waves. It was not a tortoise that you caught just now, and so kindly threw back into the water instead of killing it. It was I. My father, the Sea-God, had sent me to see whether you were good or bad. We now know that you are a kind, considerate boy who doesn't like to do cruel things, and so I have come to fetch you. You shall marry me, if you like ; and we shall live happily together for a thousand years in the Palace beyond the deep blue sea."

So Urashima and the Sea-God's daughter rowed away till they came to the palace where the Sea-God lived and ruled as king over all the dragons, tortoises and fishes. What a lovely place it was ! The walls of the Palace were of coral, the trees had emeralds for leaves and rubies for berries, the fishes' scales were of silver and the dragons' tails of solid gold. And it all belonged to Urashima, for now he was the husband of the lovely Sea Princess.

They lived on happily for three years, wandering about among the beautiful trees. But one morning Urashima said to his wife, " Although I am very happy here, I should like to go home to see my father and mother and brothers and sisters. Just let me go for a short time and I'll soon be back again."

" I don't want you to go," said she, " I am afraid that something might happen. However, if you really want to go you must take this box and be very careful not to open it. If you open it you may not be able to return."

Urashima promised to take great care of the box and not to open it at any time ; then stepping quickly into his boat he rowed away, and at last landed on the shore of his own country.

But what had happened while he had been away ? Where had his father's cottage gone ? What had become of the village where he used to live ? The mountains,

indeed, were there as before, but the trees on them had been cut down. The little brook that ran close by his father's cottage was still running, but there were no women washing clothes by its banks. It seemed very strange that everything should have changed so much in three short years.

As two men chanced to pass along the beach, Urashima approached them and said, "Can you tell me, please, where Urashima's cottage, that used to stand here, has been moved?" "Urashima?" said they. "Why! it was four hundred years ago that he was drowned while fishing. His parents and his brothers and their grandchildren are all dead long ago. It is an old, old story. How can you be so foolish as to ask after his cottage? It fell to pieces hundreds of years ago."

Then suddenly it flashed across Urashima's mind that the Sea-God's Palace beyond the waves, with its coral walls and its ruby fruits and its dragons with tails of solid gold, must be part of a land in which one day was probably as long as a year in this world, so that his three years in the Sea-God's Palace had really been hundreds of years. Obviously, it was no use staying here now that all his friends were dead and buried, and even the village had passed away.

Urashima was now in a great hurry to return to his wife, the Sea Princess beyond the sea. But which was the way? He could not find it without some one to help him. "Perhaps," thought he, "if I open the box I shall be able to find the way." So he disobeyed her orders not to open the box, or perhaps he forgot them, foolish boy that he was. He opened the box; and what do you think came out of it? Nothing but a tiny white cloud which floated away over the sea. Urashima rushed about shouting to the cloud to stop, for he remembered now what his wife had said.

He jumped into his boat and rowed with all his strength after that tiny cloud. For some time he could not reach it, but at last it floated down into the boat, and Urashima, catching it in his hand, thrust it into the box.

Then on and on he rowed, hoping that he was going in the right direction. Just as darkness was descending he saw a bright light, and a little later he was back once more on the shore of the Sea-God's Kingdom. Soon he was at the Palace where he happily rejoined his waiting wife.

Shorter Form for Testees aged 7+, 8+ and 9+

Long ago there lived on the sea coast of Japan a young fisherman named Urashima. One day he went out in his boat to fish ; but instead of catching any fish he landed a big tortoise. Now tortoises as you know live for hundreds of years.

Urashima thought to himself, " A fish would do for my dinner just as well as this tortoise. Why should I kill the poor thing and prevent it from enjoying itself for many more years ? No, I won't be so cruel."

The next thing that happened was that Urashima went to sleep in his boat, for it was a very hot afternoon. As he slept there came up from beneath the waves a beautiful girl who got into the boat and said, " I am the daughter of the Sea-God, and I live with my father in a Palace beyond the waves. It was not a tortoise that you caught just now, and so kindly threw back into the water instead of killing it. It was I. My father, the Sea-God, had sent me to see whether you were good or bad. We now know that you are a good, kind boy who doesn't like to do cruel things. You shall marry me, if you like ; and we shall live happily together for a thousand years."

They lived on happily for three years, but one morning Urashima said to his wife, " I want to go home to see my father and mother and brothers and sisters. Just let me go for a short time and I'll soon be back again."

" I don't want you to go," she said. " I am afraid that something might happen. However, if you really want to go you must take this box, and be very careful not to open it. If you open it you may not be able to return."

Urashima promised to take great care of the box and not to open it at any time; then getting into his boat he rowed away, and at last landed on the shore of his own country.

But what had happened while he had been away? Where had his father's cottage gone? What had become of the village where he used to live? It seemed very strange that everything should have changed so much in three short years.

As two men chanced to pass along the beach, Urashima said to them, "Can you tell me, please, where Urashima's cottage, that used to stand here, has been moved?" "Urashima?" said they. "Why! it was four hundred years ago that he was drowned while fishing. His parents and his brothers and their grandchildren are all dead long ago. How can you be so foolish as to ask after his cottage? It fell to pieces hundreds of years ago."

Then it suddenly flashed across Urashima's mind that in the Sea-God's Palace beyond the waves, one day was probably as long as a year in this world, so that his three years in the Sea-God's Palace had really been hundreds of years. Of course there was no use in staying here, now that all his friends and even the village had passed away.

Urashima was now in a hurry to return to his wife, the Sea Princess beyond the sea. But which was the way? He could not find it without some one to help him. "Perhaps," thought he, "if I open the box I shall be able to find the way." So he disobeyed her orders not to open the box, or perhaps he forgot them, foolish boy that he was. He opened the box; and what do you think came out of it? Nothing but a tiny white cloud which floated away over the sea. Urashima rushed about shouting to the cloud to stop, for he remembered now what his wife had told him.

He jumped into his boat and rowed with all his strength after that tiny cloud. For some time he could not reach it, but at last it floated down into the boat and Urashima caught it in his hand and thrust it into the box.

Then on and on he rowed, hoping he was going the

right way. Just as darkness was coming on he saw a bright light, and a little later he was back once more on the shore of the Sea-God's Kingdom. Soon he was at the Palace where he found his wife waiting for him.

It will be seen that the selection contains plenty of ideas, a well-ordered sequence of events, a variety of action, interesting detail and description, suitable phrasing and vocabulary.

Reproduction of "Urashima, the Fisher Boy"

Below are given the Median Attainment levels for Age Groups 7-8, 8-9, 9-10, 10-11 and 11-12.

Schedule H

Median Samples of Reproductive Type of Composition for Age Groups 7 to 12 years

Age Group 7-8. Composition Age $7\frac{6}{12}$.

Long ago lived a boy his *nam* was Urashima. And one day Urashima went out fishing in a boat and *insted* of *kecking* a *fishe* he *calt* a *toltes* and he threw it in the sea.

Age Group 8-9. Composition Age $8\frac{6}{12}$.

Once upon a time in Japan lived a fisherman named Urashima. One day he went out fishing in his boat and *insead* of *cathing* a fish he *caute* a *tortorse he's* tail was short *he's* shell was big. He said I am not going to kill him so he threw him back to sea. And he *sleeped* in his boat. A girl came from under the sea and said you catch a *tortorse* you caught me. And she said you can marry me if you like. He said *alright* and they lived under the sea.

Age Group 9-10. Composition Age $9\frac{6}{12}$.

Long ago there lived a man called Urashima. One day when he was out fishing, he caught a *tortise* with a

hard shell and *ringled* neck. He said I will not kill the poor thing I will put it back. Being a warm afternoon he fell asleep in his boat. As he was asleep a beautiful girl came up from the sea and said, " It was not a real *tortise* that you *through in-to* the water, it was I." The girl said you are going to marry me. She took him home and they lived *happly* for three years. One day he said he wanted to go and see his mother and father and sisters, so she said you must take this box but don't open it. He went off and he saw two men and he asked where his father lived but they said he was dead. Then he could not find his way back so he *open* the box.

Age Group 10-11. Composition Age $10\frac{6}{12}$.

One day a young japanese boy named Urashima went fishing in a small boat. Instead of catching a small fish he caught a *tortice* he did not kill it but threw it back into the sea. While he was fishing again he fell asleep as it was a hot afternoon but when he awoke he found a beautiful *maidon* in his boat. She then said, " As you were kind in throwing the *tortice* back, I will marry you if I may as I was the *tortice*."

She then took him to her fathers palace which was made of *corral*. He ruled over all the fish as he was king and this was his daughter.

Now one day Urashima wanted to see his parents, so his wife gave him a little box and told him not to open it. He started off.

What was his astonishment when he found his cottage gone, his parents and the village all gone. Then two men told him that they had all died hundreds of years ago. So starting off he could not find his way back so opened the box and a white cloud came out. He jumped in his boat and caught it. He kept rowing and soon he came to the palace that he had left.

Age Group 11-12. Composition Age $11\frac{6}{12}$.

Long ago on the coast of Japan there lived Urashima a young fisher boy. One day when he was out in his

boat he caught nothing *exept* a tortoise, then suddenly he thought, " I know tortoises live for hundreds of years, but I will not be so cruel to take away the life of a poor tortoise." After throwing the tortoise back into the sea he fell asleep, when suddenly a voice said, " It was not a tortoise that you just threw back into the sea it was, I, my father, the Sea God, sent me up to see if you were kind. Will you marry me."

Then they went to the palace which was made of coral, the leaves of the trees *where* emeralds and the berries of rubies. He lived *merryly* for many years, but one day he said to his wife, " Can I go back and see my parents for a little while." His wife said, " You may go, but take this box with you and on no condition must you open it."

Urashima went away and arrived home. There were still the mountains there and the little stream running through, but the cottage and the village had gone. Two men happened to pass along that way, and, Urashima asked them where Urashima's cottage had gone ; " Oh, four hundred years ago Urashima was drowned at sea," and they walked on.

Then thought Urashima, I must go back, but he did not know the way and thought that the box might help him and he opened it and out flew a white cloud and sailed across the sea. Urashima cried and ran about, then he said, " Oh, I will follow it in my boat." Soon the cloud floated into the boat and he got back once more to his beautiful wife.

The median samples for age groups 12-13 and 13-14 have not been reproduced. In fact, they are much longer, show better balance and selection of events, more detail and closer reproduction of the original material and more influence of personal emotional attitudes in the form in which the material is recalled.

Characteristics of Progress in the Reproductive Type of Composition

In certain respects reproduction is the easiest form of composition, for it requires little creative power to furnish ideas but depends mainly on memory to recall ideas presented. In other respects reproduction of a story in a carefully balanced manner requires analytic and synthetic skill of a high degree. An examination of 7-year-old compositions discloses definite defects in this skill. Some children of this age display inability to grasp and remember the story, evidence that capacity for recalling a long series of consecutive events in a story orally presented is not well developed in young children. They certainly reproduce some important events in connected form, but these might be selected from beginning, middle or end of the story according to the attraction a particular part has for them. Thus one boy, aged 7·2, to whom I read the story in its entire form during preliminary tests, wrote :

> " When Urashima went home the cotage was gone. Urashima caught a torttesse. He threw it back into the sea.
>
> When Urashima opened the box a little cloud came out. He tried to cach it."

He opens his version with an incident towards the close of the story, reverts to details in the opening paragraph, and returns to mention almost the last event heard. Such children fail to react to the story as a complex whole and, instead, single out details or isolated events, completely ignoring their relationship to the rest. Naturally, one must make allowance for the fact that writing at this age is a difficult task which demands more time and more thought than it does at later ages. But even in oral reproductions, where the grapho-motor handicap has been eliminated, there still exists evidence of juxtaposition and accompanying failure to perceive relationships.

Most children of 7 and 8 years, even where they remember

all the events, have difficulty in reproducing the narrative in a logical form. In addition to the weakness in continuity, we find that poorness in proportioning their account is a very common fault. A tendency to deal too fully with one item while another equally important is dismissed in a few words, the inclusion of useless detail and the exclusion of significant particulars are universal failings. We should realise that an effective written interpretation of such a complex set of ideas as a story is not an easy task for a young child. He has to carry on analysis and synthesis side by side. He must remember the story as a whole, next in related parts, and then again as a whole. Accurate development along logical well-proportioned lines is not a general characteristic until a mental age of 10 years is reached.

The evolution of these desirable qualities in reproductive compositions will depend to some extent upon the type of stories used. For 7, 8 and 9 year-old pupils, stories should be short. The experimental analysis shows that ideas contained in them should be few in number, clear-cut and simply continuous, without subtle complexities in action that require inferential steps to follow the story.

Comparing themes from 8-year-old pupils with those of 7 years, we find in the former a most pronounced increase in vocabulary. There are many more spelling mistakes because the children are using some words which have not yet frequently appeared in their writing vocabularies. A keen desire to relate all the story leads to long unpunctuated passages, resulting doubtless from the rate and ease with which ideas crowd into the mind.

The average 9-year-old pupil exhibits more variety of expression and shows an inclination to imitate the style of the passage read to him. Most of them still display weakness in condensing the original ; thus we find :

" Once very long ago their lived an old man whose name was Urashima. He was a fisherman . . . "

where a sentence of this type would adequately convey the same information,

> "Long ago there lived a fisherman named Urashima."

Only 32 per cent. of 9-year-olds give a completed version. It is not until 10 years of age that an appreciable number are able to complete the story.

Turning now to examine the reproductions of older children, we notice wide variations in this power to condense with accuracy and clarity. One child completes the story satisfactorily in 210 words, while another writes 382 and then fails to present a finished product. Careful examination of the compositions of pupils above 10 years of age reveals that this failure to recount compactly may be due to a weakness in general intelligence, a temperamental tendency to elaborate in detail rather than to generalise in brief, or a lack of systematic practice in reproducing, reporting or summarising material read either silently or aloud. Pupils exhibiting intellectual inferiority fail to select salient features in the story because of an inability to distinguish important points from unimportant ones. Their power of analysis is weak and consequently their reproductions reveal an unbalanced proportioning of major and minor issues. They need additional presentation with supplementary aids in the form of dramatic devices or concrete illustrations to assist them in detecting the nature and order of the main events.

There are other pupils whose general mental attitude impels them to embellish and extend. Examination shows that many of these children are imaginative types with pronounced verbal proficiency in reading, spelling and recitation. At the other extreme is the pupil who excessively shortens and simplifies his reproduction so that his composition is little more than a bald statement of essentials. Exhortations from the teacher to write more or to expand, yield little result, for his extreme economy of output in the verbal field often has an emotional basis. Not infrequently

such children are able arithmeticians with a logical ability expressing itself in a direct, concise manner.

Particularly amongst older children there is ample evidence of emotional influences on the reproductions—elaboration, explanation, rationalisation, interpretation according to personal desires, introduction of the dramatic, and a tendency to point a moral.

They frequently elaborate or supply reasons to bald statements of fact. Thus, where the original reads :

> " One day Urashima went out in his boat to fish. But instead of catching any fish he landed a tortoise."

Eleven or twelve year olds give reproductions with details such as :

> " . . . he felt something very heavy in his fishing net, he gave a vigorous tug and up came a large tortoise."
>
> " . . . as he was fishing with his rod, he felt a pull and hauling in his line quickly he found a tortoise at the end of it."

Or again, statements in the story such as :

> " As he slept there came up from beneath the waves a beautiful girl who got into the boat and said : ' I am the daughter of the Sea God.' "

are given these constructions :

> " . . . he gently put the fish into the water again. He watched it swim away, and for a little while he was quite alone, and then as he was looking down into the water he saw a lovely mermaid rise up from the depths."
>
> " Quite unconsciously he found that his eyes kept closing as if in slumber, and at last he lay down in his boat and went to sleep. As he slept a wonderful dream came to him, and he dreamt that the daughter of the Sea God stood before him and said, ' Urashima, you are to be rewarded for your kindness.' "

Unlike younger children, who accept somewhat uncritically statements in stories no matter how weird and wonderful, the older child dislikes unexplained situations and desires some detail of how and why things happened ; where this is missing in the story they tend to supply it themselves in their reproductions.

Finally, a careful reading of the " Urashima " compositions strikingly reveals the great value of a reproductive composition, both for junior and senior pupils. As a stimulus to writing—and we learn to write by writing—its value is inestimable, for vocabulary, sentence structure, sequence and balance can all be improved through its use. At the same time, teachers should be careful to proportion the use of the reproductive composition to the particular needs of the pupils. With backward children it must be used extensively, but with normal pupils its overuse may have a vicious influence on natural creative powers.

B. Narrative-Descriptive Type of Composition [1]

Subject—" Home "

Below are given the Median Attainment levels for age groups from 7-8 to 13-14 years.

Schedule J

Median Samples of Narrative Type of Composition for Age Groups 7 to 13 + years

Age Group 7-8. Composition Age $7\frac{6}{12}$.

Home

I have a kat in my Home. I got a babe at Home. I am gowing to the shops on Satday. I sleep in a bed at Home. I am gowing to the park on Sunday.

Age Group 8-9. Composition Age $8\frac{6}{12}$.

Home

I have a brother at home and he gives me pennys. Sume-times I help my mother to wash-up. Evry

[1] Alternative Median Samples for this type have now been prepared on *Saturdays and Sundays* (to be published shortly in a *Manual of Tests*).

sunday my sister takes me out for a walk. And I do evrything mother tells me to do. A little girl lives down my street and I teach her to be kind. I have five rooms in my house. I went to see my auntie last Saterday. And I took my doll and pram. I go to bed ealy evry night. I have a cat.

Age Group 9-10. Composition Age $9\frac{6}{12}$.

Home

At home I have some toy which I play with, and some books which I read on winter nights. At we have chairs which we sit on to have tea and dinner we have to have a table because we would not be able to have our meals. At home I have a dog and when we are eating he sits up because he wants some to and so we give him something to eat. We have some picturs round the wall. On firework night at home we will have some fireworks. Sometimes I go my cousins house to play draughts and snaks and ladders. My house is not very far from the school where I go.

Age Group 10-11. Composition Age $10\frac{6}{12}$.

Home

Home is a very pleasent place espiacially when it is night time. Until quarter past eight I do knitting and reading. At half past four when I have been home from school mother will not let me go out to play because it gets dark quickly.

After meals I wash up excepting at breakfast time. In the winter time it is very nice to be home quickly and get snuggled in a book by the fireside.

I often get the baby to sleep by humming him a little tune and rocking him in my arms. Sometimes it makes my arm ache as he leans againts it.

At home when I am washing up I always sing. Our stove is in the kitchen so that in the winter not only the fire can give heat but the stove too.

Mother has nine children and I am the second from the youngest. Three children go to work, the others excepting for one go to school.

Age Group 11-12. Composition Age 11 $\frac{6}{12}$.

Home

I live at eighteen S—— Road ——, B——. My home is a home which as soon as I get in the door every-thing seems to welcome me. My little sister runs to the kitchen door to meet me, my little kitten comes and rubs up against me.

We have four rooms and a scullery. One is a kitchen, another a sitting room, and two of them are bedrooms.

We have a lovely fire every day in the Winter. On every room is not a speck of dirt to be seen for my mother and father are very particular.

The scullery is a fairly large sized room but the kitchen is the largest room we have, the room that is nearly as big as the kitchen is the front room which is a bedroom. The other bedroom is a small room. We also have a garden with a different kinds of flowers in it, while there is a railway at the back of us. The railway is a very busy one for every day hundreds of trains run along it.

Age Group 12-13. Composition Age 12 $\frac{1}{2}$.

Home

Where I live facing the park the wind goes through the trees with a howl. When you have been out you come back home and rest. We have in our house one kitchen, two bedrooms, one parlour and a fairly big garden and the scullery. We are now having electric lights down the street for the people who need it and we are one of them.

The homes could be made more cheerful in London by the flowers in the garden but the place

being surrounded by factories makes the earth black and the flowers cannot grow so well.

At the back of our garden we have a tar factory, it is very useful in some ways, but other times we wish it was not there. One reason why it is useful is because a little boy next door had hoopin cough and when he was allowed to get up he used to sit on the balcony and when the men were melting the tar it helped him to get better.

Age Group 13-14. Composition Age 13½.

Home

Everybody should consider homes as there best place because there are a good many people without a home to live in. People now-a-days are even grumbling because they cannot make there homes look nice without thinking of some people without homes at all. My house is situated in N—— where I have lived all my life, and I think it must be unpleasant without a house to live in. In the summer people are nearly always out, but in the winter nearly everybody wants to keep in, but some poor people have to roam about and sleep in the streets.

In England we ought to be thankful for in other countries they have earthquakes which destroy houses. People can see what some children have to bear when they have to go to orphanages. If we are out we sometimes wish to be indoors and some people express it as "Home Sweet Home." As most of us at school have got a home to live in I think we should all strive and make our homes comfortable and enjoyable where anybody could live.

Characteristics of Progress in the Narrative-Descriptive Type of Composition

Subject—"Home"

The most elementary example of narration is to be found in the poorest pupils of the 7-year-old group, where

some in their last year of an Infant School, and still fewer in their first year of a Junior School, do not get beyond plain enumeration. Thus they write :

I have a cat.
I have a big bed.
We have a jug. (C.A. 7·4. M.A. 6·1.)

But the bulk of 7-year-olds are able to express themselves in simple descriptive form. Their work, not infrequently primitive in pattern and crude in conception, is of this kind :

My home has a chimley on it.
The cat runs on legs.
I have a train at home and tinse.

Occasionally they can give a more detailed description of a particular object, although not entirely free from discontinuity or from transposition of related ideas, as the following sentences demonstrate :

" The cat is black and he has white eyes he does not like ror meat and has white nek on his shin."

Most children at this age draw largely on their direct experiences for ideas in oral and written composition. They recount things seen or done in the familiar activities of home or school. Almost invariably they relate with relish information concerning their father and mother and what they can do, the baby, pets, mice, dogs, cats or birds, toys and simple oft-repeated occupations in their daily life. Thus in their compositions on " Home " there was very little mention of such topics as the house (size and appearance), furniture, rooms, general routine of the household or essentials of family life. They correctly express a relation between two fundaments within their experience, but with most of them this represents their maximum achievement. They fail in relating or linking up consecutive ideas, so that statements generally show a lack of continuity and coherence. They commence with one idea, only to divert in the next sentence to a second idea entirely unrelated,

and thence to a third still further directed from the substance of previous thoughts, for example :

> " My father works at Peak Freans.
> We had our cat when he was a kitten.
> I have a sum book at school. . . ." (Age 7·6.)

Perhaps this is not so much an inability as lack of experience and analytic power. In drawing, we find the same manifestation—essentials only are shown with but few embellishments. For example, in drawing the human form, head is joined to body without a neck, and this although a human being may be present while the drawing is being done.

As we pass to compositions of the 8 and 9 year-old mental levels we observe an increase in extent of objects and situations mentioned and a maturation in type of description. Reference is made to the family, the house, rooms, pieces of furniture, articles of amusement, shopping expeditions and more varied events in home life. The majority of pupils still tend to narrate and describe in a jerky manner ; the sequence of facts of prime importance matters little. Thus the average effort runs as follows :

> " My home has chairs and a table. In the bedroom there is a fireplace. At home there are two bedrooms a big one and a small one. I have two brothers a big one and a smaller one. I go shopping for my mother and father." (M.A. 8·5.)

There is ample evidence that general development of the theme is dependent very largely on chance association of ideas. Some dominant thought or recent contact starts them off, so that, " My mother has to do the cooking," " There is some flowers in the frunt room," " I have a cat at home," " We play with the boy nekst door," are all equally suitable openings for the varied, somewhat diverse expressions, which are to follow.

Examination shows that amongst pupils with a *mental age of nine* we find the first attempts at general *introductory*

remarks or some form of related development. Naturally, these attempts vary in efficiency and continuity. In their simplest form the child merely makes two or three bald opening statements about the home, its position, size or appearance, for example :

> " My home is not very far from school. It is near a railway bridge. When I go home I have to go up a lot of stairs. In the front room we have a wireless. . . ." (M.A. 9·1.)

He then proceeds to describe in arbitrary fashion the household articles and their uses, the occupants and their doings, changing from one topic to the other as associated thoughts dictate.

The next stage in logical development is characterised by further general opening statements, at times touching on the abstract and indicating a higher level of thought. The mode of expression is, however, not sustained and is of the following standard :

(*a*) " Who hasn't a nice home ?
Nobody. If you have been in the rain and come home drenched mother dries you and puts you by a roaring fire. Father is a big jolly looking man. If I do not know how to do a sum Father shows me how to do it. . . ." (M.A. 9·7.)

(*b*) " Home is a very nice and comfertable place, we who have homes realy thank God that we have got a home. I am sorry to say that some poeple have no homes they are mostely tramps. Now at home we have lots and lost of things now for instance theres a cupbord and chairs, fire place and a cat witch is my pet and he is a gentalman he likes mice but we have not any so he gets angry and hungry. . . ." (M.A. 9·6.)

The second of the two examples cited above aptly demonstrates the increase in experience and intelligence at the 9 to 10 year level, but there is still a tendency to

thrust into the theme an almost irrelevant topic or to follow in detail the stimulus of a sporadic thought.

Sometimes these early beginnings of systematic development in written composition result from conscious use of visual imagery. Before writing the child turns over in his mind's eye images of events or things he is about to narrate or describe. Their own expressions are varied, such as, " I can see it without looking," or " I make little pictures in my mind. . . ." This simple procedure sometimes aids them in selecting the correct order of narration or description. At the 9-year-old stage, too, one occasionally obtains a connected description of a particular day in the home, while an additional characteristic of these compositions is the intrusion of wishes and desired situations into the theme. One child will openly tell you that he wishes he had a brother to play with. Another vows that he likes home very much " because you can do what we like and sit around the fire and tell stories " ; a third hopes that her sister will soon get well and come out of hospital ; while a fourth, who lives in a home where squalor and marital disharmony hardly make for happiness, describes in full detail a bright, happy home.

Turning to the written work of pupils whose mental ages range from 10 to 12, we find that differences in quality are merely ones of degree. There is better development of the narrative, greater detail in description and slightly more abstract thought. More of these children start by citing the street they live in, the number of the house, and what the house looks like from the outside. Then they give a few facts about the garden and continue with information concerning the interior of the home, the number of rooms, the various articles of furniture. Sometimes, before this last aspect is treated, members of the family—number, ages, positions—are discussed. A typical narrative runs as follows :

" My home is in Witcher Street. The number of the house is 30. It is painted dark brown on the outside

and has a small garden in front. My home has three departments. There is a low department but that has nothing to do with us. There is a middle and a higher department and these are our flats, which we get to by climbing some stairs. The first room we come to is the kitchen, which has . . . " (M.A. 10·6.)

The above sample is representative of the carefully considered concrete composition on " Home," but there are also found in these upper age ranges compositions written almost entirely in an abstract vein. These increase from 7 per cent. in 10-year-olds to 54 per cent. in 13-year-olds. At the latter age level written English reaches, in not a few pupils, the standard exhibited in these sentences :

" For some people the word Home means something quite different from what Home really is. For the street urchin the word Home merely means a dirty house in a narrow alley, without any glass in the window frames, with but a few sticks of furniture and having only broken down stairs. For the sailor or soldier or any man who is often absent from home, it means much more. It conveys to their mind a wife and perhaps children, a nice clean kitchen, a bright fire burning and old faces which, of course, is the ideal home. . . ." (M.A. 13·5.)

Finally, we may note that the narratives of older children reflect, in several ways, their growth in intelligence and experiences. They can handle ideas not closely related to direct experience, they are able to develop issues more complex in nature and, above all, to comprehend the relationships existing between the various issues. The disjointed, discontinuous statements of the 6 to 8 year-old mental levels have been replaced by a narrative, the intellectual structure of which is characterised by greater unity, continuity, clarity and complexity.

C. Imaginative Type of Composition

Subject—"If you had wings and could fly, tell what you would do."

Below are given the Median Attainment levels for age groups from 7-8 to 13-14 years.

Schedule K

Median Samples of Imaginative Type of Composition for Age Groups 7 to 13+ years

Age Group 7-8. Composition Age $7\frac{6}{12}$.

If I had wings and could fly. I would fly over the houses and fly over fensis. I would fly in the play in the playground and fly home to my mother and father and have my dinner and fly to scool.

Age Group 8-9. Composition Age $8\frac{6}{12}$.

If I had wings I would fly about in the sun-shine and play in the fields. I would fly over the tree tops high in the air. I could fly with the birds in the air every day.

I would play among the fiaries in the field too. If I where a fairy I would teach the rabits how to play games in the sun. I would play hide-in-seek round the trees in the wood. And I would be able to see all the little baby birds in there nest in the trees. I would fly and get my mothers erands every day.

Age Group 9-10. Composition Age $9\frac{6}{12}$.

If you had wings and could fly what would you do?

If I had wings I would fly over the sea and see all the fish's in the water. Then I could fly to school. I expected at first I would for-get they were on me, but I wonder how I would go to bed with them on. I have never seen anyone with any on but I would laugh if I did. But if I did have a pair, I would fly to

Africa to see the black boys and girls. I would ask them if they would lend me some of their spears to show the boys in my class. Then I would fly over to Ceylon to get some of their tea if they'v got any to spear. When I am over there the first thing I shall see is some bungalo's. Then I shall fly over to Scotland to see the kilts.

Age Group 10-11. Composition Age $10\frac{6}{12}$.

If I had wings and could fly

If I had lovely gauzy wings I would soar right up into the sky and alight perhaps in quite a different place.

It is a very cheap way of travelling because you don't have to pay. The first place I would go to would be a thick dence forest with trees knotted all over the place, the reason is because if any of my friends come with me we can have a game of hiding seek and hide in the hollow of a tree and we might even find a tresure box hidden in the branches.

The next place I would go to would be switserland where all the snowy mountains are, but I want to know how to get there. First I will go to the sea coast and follow a ship which says Going To Switserland. I fly after it and if I get tired I will board the ship when no one was looking. When I had recovered my breath I would start of again.

Age Group 11-12. Composition Age $11\frac{6}{12}$.

If I had wings and could fly

If I had wings and could fly, I would fly into the country where I had never been before. I would go to the woods, and fly into the branches of the trees. I would stand on top of the hedges, I would fly to the lonely moors where I would pick the wild flowers, and then fly back to the dusty streets of London and plant them in the gardens to make the roads and streets look pretty. It would be wonderful to have

wings and be like a bird to fly up in the sky. If I had enough strength I would fly on top of the alps to see the beautiful sights. I would stay until the sunset to see the snow on the mountains turn white to red. Nearly every day I would visit the sea and do all the movements the gulls do, glide along the water and also enjoy the spray which the motor boats make.

Age Group 12-13. Composition Age $12\frac{6}{12}$.

If I had wings

If I had wings and could fly faster and farther than an earoplane I should want to know what Mars was like. I should fly and fly till it was cold and I needed Oxegyn. I would have to come down because I would not be able to breathe and I should not like to die in midair.

Next I'd fly to Africa and as I went along Cape Town I would pick grapes to last me till I was tired of Africa. Then I would go to the pigmies and see them shoot with their poisoned arrows.

I have always had a secret longing to go to Arabia and see the Arabs on horseback riding through the desert under a stary sky. But now if I had wings it would be far more exciting to be able to fly all the way than to just go by boat.

One more place I would like to visit is Holland to have a skate on the frozen canals and see the windmills.

Age Group 13-14. Composition Age $13\frac{6}{12}$.

My Wings

If I had wings and could fly I should fly to Honalulu. I have heard that the native men are very strong and the girls very beautiful.

When I arrived I should like six leis put round my neck by the native men and girls. Every morning I should go surf riding on the Pacific Ocean, until about nine o'clock in the morning. After that I should

rest on the sands and bask in the sun, I would stop in my hotel until midday is passed because it is so hot and the sun might scorch my wings. At about four o'clock I should go for a fly round the islands and have a swim with my native friend and return at dusk. When the moon is high and the natives are strumming their guitars I should get one to come in a boat with me on the Pacific with his guitar.

After spending the evening on the water I should fly back to my hotel to bed. Next day I should do the same. If my wings were stiff from want of use I should take more exercise.

A fly round the world couldn't be half so exciting as my Honalulu holiday.

Characteristics of Progress in Imaginative Type of Composition

Subject—" If you had wings and could fly tell what you would do."

For pupils at the 6 to 8 mental level this was a difficult composition topic and it provided a most searching test of real imaginative power. Very few compositions at this level exhibited glimmerings of original imaginative ability. Most children kept to the environment of their immediate experiences and wrote in one of three different strains. Those of average intellectual calibre described simple everyday happenings carried out per medium of a pair of wings. Others related familiar events in the life of a bird, while a few supernormals realised the possibilities if one could fly, and managed to break away from their own narrowly prescribed life cycle.

The first group of writers merely stated that they would fly to school ; go messages for their parents, visit friends or fly aimlessly in the sky. Members of the second group wrote :

" I would fly away on the roofs and I would pick up the crums of the florer. I would fly ercross the

gardens. I would fly over the house and ercross the sky." (M.A. 7·4.)

"I would go up into the trees and go into the nest and go to sleep in my nest and go looking for flies.' (M.A. 7·1.)

Many of these children found difficulty in dissociating the idea of having wings from that of being a bird. They regarded the two things as synonymous and introduced into their compositions ideas from stories they had heard or read about birds. A few weak ones in this section wrote in the following way :

"I saw a little bird looking fore food.

"The little birds fly away into warmer lands in winter."

The third group of testees launched on an imaginative flight and reached a simple creative plateau. They told how they would like to visit fairyland, fly into a flower, go to other countries, hide under a mushroom so that no one could see them.

Comparing all compositions with those written on the subject "Home," one finds that those on the imaginative topic contained more irrelevant facts, repetition of words and wordy statements with few ideas. One child wrote 109 words which embodied only two thoughts.

Examination of the written work of 8 to 9 year-old pupils reveals that, in general, there is a marked increase in variety of ideas. Already the desire to fly to other lands is more noticeable, Switzerland, America, China and Africa being the most chosen countries. A few children actually cite the things they wish to do abroad, such as watch the ice skating in Switzerland, mount the sky-scrapers in America, go with the ferrymen in China, see "the camels with great big humps where they carry their food."

In particular, three points stand out most clearly after a careful re-reading of compositions of this age. Firstly, the ideas associated with the uses of wings are as yet scanty

and simple, being covered in the main by the five facts—that owners of wings

> could get to school early,
> go errands and make visits quickly,
> would not have tired or aching legs,
> would save money as there would not be any train, tram or bus fares,
> could pick apples, gather nuts or get on roofs without being scratched or without the attendant trouble of climbing.

Secondly, the ideas associated with make-believe, wish fulfilments and fairies [1] are more varied and more numerous. Some children, mostly girls, wrote their entire composition about fairies, elves and pixies, others simply mentioned their contact with fairies as one of a number of activities, which they desired to pursue, thus :

> " But one day I would go visiting the fairies and see the baby fairies in their leaf cradles the mothers getting them off to sleep with thistle down coveres on top and the birds pipeing them off to sleep." (M.A. 8·9.)

The third noticeable feature of the compositions at this age level was that a very large number of the child's statements were concerned with nature. Sentences such as,

> " If I could fly I would be able to see the baby birds in their nests up in the trees."
> " At night I would fly into a wood and see the beetles doing their work and the spiders fast asleep."
> " I would go into the woods and watch the rabits jump along and scamper in their holes."

[1] It is interesting to note the relative numbers of children in the various mental age groups who mentioned visiting or seeing fairies. At the intellectual levels of 7, 8, 9, 10 and 11 the percentages were 7, 12, 19, 11 and 2 respectively. Examination of themes showed that it was not uncommon for children with chronological ages of 11 and 12, but with mental ages considerably lower, to refer to fairies. The 2 per cent. of normal 11-year-olds appeared to be babyish children with regressive tendencies of an undue liking for fairy tales.

could be found in most compositions. A few boys revelled in the opportunity for speed that wings provided and would

> "see who could fly the highest and fastest each day,"
>
> "search for an areaplane and chase it and try to fly with it."

It is, however, at the 9+ and 10+ year-old mental levels that one finds the greatest variety of imaginative expression on this particular subject. Not only did the compositions of these pupils contain real imaginative passages, but the ideas were, relatively speaking, treated with rare skill and charm. No doubt the subject had particular psychological significance for them. Younger testees of ages 6 to 8 years lacked, in many cases, the knowledge which is necessary as the stimulus and later as the core for creative work; but for children between the ages of 9 and 10+ whose repertoire of accomplishments, horizon of experiences and reading ability had sufficiently increased to furnish thought, material, and a sense of power, the subject made an immediate appeal. It provided an opportunity of showing what they knew, of gratifying wishes and exploring unknown realms. Furthermore, pupils of these ages were not too far removed in outlook from the make-believe and the imaginary in play and literature to be either critical or reticent about expressing themselves on such a theme. What one felt most on reading through the work was the sheer delight with which many children had approached the exercise. *As interest quickened and imagination stirred, so the mechanical and structural aspects of writing improved automatically—a point of vital importance to all who seek to teach expression through the written word.* I select to exemplify this latter point a specimen from a number of similar standard :

> "If I had wings to fly I would soar high up in the sky and see all maner of beautiful things. I would go and play with the pretty little bees. I would fly and see the dear little goldfish drinking in the stream. I

would play hide and seek with the thrush and the sparrow. I would go and visit the beautiful moon and stars. I should go and visit the many coloured butterflys.

" I should go and play with the raindrops. Phapes I should play with the spiders and get them all tangeld up in their webs. I should go and see the Bluebells and Primroses as they sway to and fro. I would fly on the swallows back and hear the ringing of church bells." (M.A. 9·7.)

For originality of pattern and beauty of treatment, this selection reaches a high level, achieved without doubt by the interest aroused in the activity.

Let us consider now particular points illustrated by concrete examples from the compositions of pupils at the mental ages of 9 and 10. From the outset one is impressed by the increase in cases in which the child would use his newly acquired power of flight to find out things. Between 40 and 50 per cent. of the papers contain references to finding out about the sun, moon and stars, discovering what is on top of snow-clad mountains, seeing how people live in other lands, watching where the birds go in winter, finding out where the animals sleep, and a host of similar problems. The countries visited have grown in number and vary from Greenland to Jamaica, while the accompanying descriptive geography reveals interests in places far removed from local habitats. Many children state that they will tell friends of their adventures or write a book about their travels. Typical of the miscellaneous medley of activities in which they would indulge is the following :

" If I had wings and could fly this is what I would do. I would fly up into the sky and land on a star which, we in earth, say that they are countries. Then I would fly up to the clouds and see what they realy are made of.

" Then I would fly to the seaside places, and walk

on the sea. Then I would fly to the country and ride on a cow's back standing up, without falling off.

"Then I would fly off to foreign countries and see how they build their pallaces and how they sell there goods and how they dress.

"Then I would go over to Persia and see how they make there beautiful carpets. Then I would fly up into the sky again and see what the sun really was. Then to Egypt I would fly and see those great pyramids, sphinx's and temples." (M.A. 9·6.)

Here again we may note, as with the compositions of the narrative type, the tendency, even at this age, to revert illogically to points already treated.

Two other characteristics of growing mental powers merit attention at this stage. The first of these is the increased emphasis, particularly amongst 10-year-old pupils, upon the advantages that would accrue from being able to fly. One child, mental age 10·7, carefully enumerates the following uses in her output of 182 words :

> "visit all the countries in the world and see all the sights and not have to pay the expense of travelling by ships . . ." ; "fly to school and that would be quicker than on foot . . ." ; "give rehersals of fancy flying and charge sixpence admission, and if I could take them off, hire them out . . ." ; "As fairies are *supposed* to have wings I would make up lots of fairy plays and be one of the fairies because I could fly . . ." ; "get an inventor to invent some more wings and then sell them . . ." ; "Ships charge a a lot to take messages to other countries so I would deliver them for less money. . . ."

Secondly, we notice the commencement of a tendency to talk about the wings themselves, how they came to get them, what they are made of, and the care needed to keep them intact. A few 10-year-olds state that they would be

watchful not to go too near the sun for fear of scorching their wings. Others, apparently recalling the story of Icarus, say that a flight in high altitudes would be dangerous because the sun might melt their wings.

Turning now to review in very brief space the written work of children whose mental ages range from 11 to 13+ we notice immediately an inclination to make the title of the composition more concise and concrete. Thus we have such headings as "My Wings," "Building Castles in the Air," "A Trip to India," "The Seagull," "Fairy Fleet Foot," "Imagination." This is one indication of a changing method of treatment by these older children. Their compositions reveal a change from the unconsidered, unassorted catalogue to the carefully selected record of events. It is not that they have fewer ideas,[1] but there is a growing desire to write in more detail with more connected narrative. For example, when a 12 or 13 year-old informs you that he wishes to see Arabia he usually states what he would see, the Arabs and their horses, the deserts and the oases, the bazaars and the merchandise. In general, three main tendencies of a different kind are found in the imaginative compositions of these older children. There are numerous examples of two quite opposite attitudes. The first is an acceptance of wings as a means of escape from reality. The second is an emphasis upon the unreality

[1] Not unnaturally we find in the Senior School pupils who are below normal mental standard. Amongst some 11 and 12 year-old scholars one is amazed at the paucity of ideas, the absence of imaginative ability and weakness in expression. In some cases their achievements resemble in almost every detail those of normal 8 and 9 year-old pupils. A concrete case illustrates the point. E. D., chronological age 12·9, mental age 9·8, writes :

> "If I had wings and could fly I would fly to other countrys and fly to get mothers earons. I would fly right up in the air and look like a bird, and if boys and girls had wings we could have games, of 'hind in seek' and 'he.' I could look in birds nest and see if they any babies or eggs. I would not come to school and to lessons I would fly about instead, but if I got tired I would lie down to rest. I would great fun if I had wings. I would teese all the people and then fly into the air laughing."

Not a few themes of dull 11 year-old children were taken up almost exclusively with either flying to countries (little detail) or seeing fairies—the references to fairies amongst normal children of 11 years of age is 2 per cent., amongst backwards of the same age it is 21 per cent.

of the situation. Enquiry reveals that these diverse attitudes adopted by different children result very largely from differences in temperament. There is an appreciable correlation (+0·46) between the amount of satisfaction and success that the children are obtaining in their immediate environment and the degree of fantasy activity that enters into their compositions.[1] In other words, the written English of some pupils in this particular theme is an expression of emotional difficulties and unfulfilled desires. Unhappiness at home, failure in school or some feeling of inferiority prompts them to seize upon this chance of outwitting reality and obtaining gratification elsewhere. There are numerous instances amongst this group of the desire to escape from trouble or from school. They express themselves in terms such as :

(i) " If teacher was going to give you the cane you could easily fly away." (C.A. 13·7.)

(ii) " If I met somebody I did not want to meet or somebody was going to grumble at me I would just fly into the air." (C.A. 12·6.)

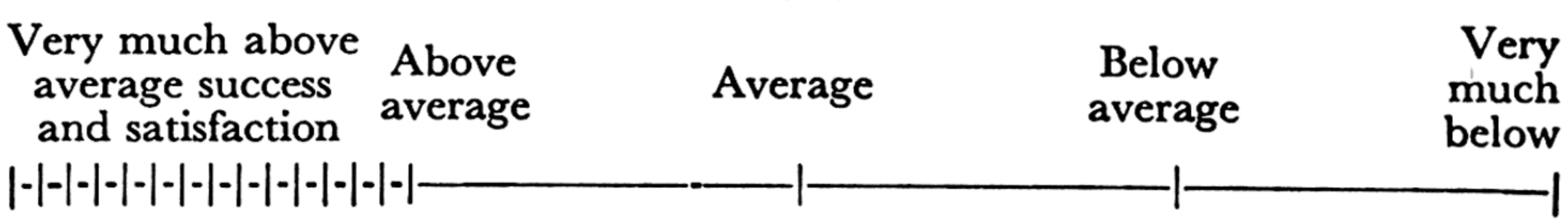
Another variant of this attitude is that of having an advantage over people whom the child does not like or over people with superior powers, thus :

(i) " Wouldn't it be fun if teachers did not have wings." (C.A. 13·1.)

(ii) " My sisters have secrets and would never let me see them but I would only have to fly over their heads and look down and see them."

In addition some children in this group regard wings as a means of detaching themselves from social obligations, of

[1] Using a five-point scale with the intervals divided into 14 divisions, thus giving a possible 70 points for each pupil in each of the two traits measured.



obtaining solitude or of carrying out prohibited activities. Illustrative of these ideas are the following statements, selected from a large dossier of similar ones :

(i) " I could go up in the clouds where no one would see me." (C.A. 12·11.)

(ii) " I would fly to the pictures without anyone seeing me." (C.A. 12·1.)

(iii) " I could go swimming every day without anyone knowing." (C.A. 13·2.)

Consider now conceptions of a contrary nature, where contact with actuality is constantly dominant in the child's mind. We find that such statements are usually characteristic of scholars who have their feet firmly on the ground and who are obtaining normal emotional satisfaction from the various activities of their life. The imaginative compositions of these children contain provisos which continually hark back to reality. They rarely give their imagination unbridled rein or become so absorbed in fancy that reality is forgotten. Their outlook rarely reveals evidence of unsatisfied impulses or thwarted development, while their fanciful flights, creative and constructive as they may be at times, are usually centred around activities in which they are efficient or are based upon ideas indicative of a healthy mental attitude for their particular age. Quite often the compositions of these children conclude with such statements as " but as my wish is not true I cannot do these things," " it is only a dream, . . . unless there was a great change."

In a few cases some of these children actually debate the question whether we want wings or not, pointing out in a logical way several of the possible disadvantages and dangers, while amongst many pupils at these age levels there is a general consideration of the bodily alterations necessary for adopting wings, the nature of the wings and how one would need to handle them—all of which points are taken for granted by younger children. Finally, it is interesting to note that girls of 12 and 13 make much use

of wings for increasing their knowledge of biology and natural history, while boys of a similar age use them for indulging in all kinds of adventurous exploits, such as living like Crusoe on a deserted island, being a flying detective who could arrest criminals in all parts of the country, engaging in speed races with Schneider Cup pilots. This distinction serves to emphasise further how intimately connected with the emotional life of the child, even to the extent of revealing individual differences in temperament, age and sex, is the imaginative composition.

D. Explanatory or Expository Composition

Subject—" How to play ———" (a game)

Below are given the Median Attainment levels for age groups from 7-8 to 13-14 years.

Schedule L

Median Samples of Explanatory Type of Composition for Age Groups 7 to 13+ years

Age Group 7-8. Composition Age $7\frac{6}{12}$.

A Game

I play Jamans ereraplans and ingland ereraplans there are six on to Four we chas one anver and wen we are calt we are put in to prisern then some one come and gets us away frome prisern then we run away.

Age Group 8-9. Composition Age $8\frac{6}{12}$.

How to Play Mothers and Fathers

Shall we play at mothers and fathers to night? Yes. Then Irene can be baby and Jean can be father and I can be mother. Irene can sit in babies pramu-later. She can wear her shawl and bonet if it will fit you. Jean can wear Daddies hat and over-coat. I can wear Mumies apron and dusting cap. Now I

think we can start the game First of all baby must her supper and go to bed I think you and I can go to pictures. Now baby must be washed and carried up to bed.

Age Group 9-10. Composition Age $9\frac{6}{12}$.

How to play hide and seek

This is a game that children can play in the winter when it is very cold. One of the children have to hide there eyes and the others have to hide away somewhere. When the people hide they call out ready, and the child looks and when he finds him he has to call out and say caught and he has to be it. This is a game that must be played fairly and no one must cheat. If you when it is your turn to hide your eyes you must not look to see if the children hide, if you do you are a cheat. You can not have two children you must have about eight or nine.

Age Group 10-11. Composition Age $10\frac{6}{12}$.

How to play Releaser (a game)

This is how to play a game of Releaser. First of all there has to be two equal sides. Then two leaders pick up to see which side has to run out and hide. Then the other side tries to catch them there has to be one man in the " pot." If one of the Hiders are caught they stands in the " pot."

If one of the hiders are not caught he tries to get in the " pot " and touch the one caught. If he does he shouts " Releaser." When one of the seekers catches the hider, he tries to hit him on the head and say, " One, two, three, crown him."

The one who catches the hider cannot have him unless he the hider has not got his hands upon his head. If he has his hands upon his head, another one of the seekers takes his hands off of his head and haves him.

Age Group 11-12. Composition Age $11\frac{6}{12}$.

How to play Joan of Arc

First of all you get five or six girls together. Then you chose one to be the speaker, she stands by the wall and the rest stand in front of her.

Then she says, "Joan of Arc wears stockings," and if any of the players wear stockings they run and the one who wins is the speaker. But if the speaker says Joan of Arc wears falce teeth you must not run because you don't wears them. Sometimes they say "Joan of Arc looks beautiful" and you don't know whether to run or not. Other times they say "Joan of Arc looks ugly," sometimes the players run and other times are sensible enough not to run. When they say you dont wear anything it very silly to run.

To play the game well it is nesessary to think quickly and make up your mind to stand still or run hard.

Age Group 12-13. Composition Age $12\frac{6}{12}$.

Ludo

Ludo is an indoor game. You have a big square piece of thick cardboard which has a square at each corner to put the counters in, one is coloured blue, another green, another yellow and the last red.

The highest number of players you may have is four, and each have four counters each.

One player takes the dice, and shuffles it, in an egg-cup or any other object required. If he throws a six he goes first, he takes one of the counters out of the square and has another go, and gradualy he moves the counter round the board, in the squares, to which numbers he throws. The others do the same when they have thrown a six to start them off, and each player throws the dice in turn. If another player moves on to one of your counters you must take it

back to the beginning and start again. The first one who reaches the home wins.

Age Group 13-14. Composition Age $13\frac{6}{12}$.

Netball

Netball is a game taught in most schools as there are netball matches held between schools for a shield. It is a game played by fourteen girls, seven girls on each side. There is a centre and centre forward, shooter, defence shooter and two centre attacks on each side.

A coin is tossed and each side has a choice of heads and tails if it comes down tails, the side who said it, gets first innings or, choice of goals. The game starts with the ball in the hands of the centre. She throws it across to centre forward and centre attack tries her best to catch it. If she misses and centre forward catches it she passes on to the shooter or help shoot. Suppose shooter has obtained the ball, she then tries to get a goal, but sometimes she is unlucky and the ball bounces on to the ground again. Unluckily shooter defence gets hold of the ball and passes it to help shoot and over goes the ball to the other side, where the opposite shooter gets it. Up goes the ball and everyone shouts "Goal!" and it is one up for the other side. It is a very exciting game and keeps the players warm on a winter day.

Characteristics of the Explanatory or Expository Type of Composition

Subject—"How to play ——" (a game)

The explanatory type of composition is to many children the most difficult of all written English exercises. To describe with clarity of detail and accuracy of order the execution of a particular activity demands not only intellectual power but logical ability and facility in written

language.[1] In proportion as pupils possess these qualities so they succeed in explaining how to play a game, effect a repair or construct an article. No doubt the general deterioration in development and in grammatical accuracy noticeable when we compare this type of composition with those on narrative, reproductive or descriptive topics is due in part to a greater emphasis on this special logical power. In addition it will be observed that as the majority of explanatory compositions deal with constructive activities of the child embodying movement and repetition of bodily skills there naturally surge into his mind, while he is writing, many ideas, often out of order but all impelling him to set them down, in word form, as quickly as they arise. Insistence on a preliminary sorting out of ideas, important from unimportant, those relating to early steps from those relating to later steps, certainly reduces errors in continuity of thought and in sentence structure.

Examination of the " play " compositions of the pupils at the 6 to 8 year-old levels shows that the majority deal with such games as ball, chasing, hide and seek, cowboys and Indians, with a section amongst the girls, on make-believe occupations such as playing at schools, or mothers and fathers. From a literary standpoint the compositions are inferior in standard to those on " Home " or " If I had wings and could fly." Discontinuity of development is more prevalent and there is a large increase in errors of punctuation. Full stops and commas are omitted *en bloc* as a spate of ideas associated with delight of repetitive movements are hastily converted into words. Thus one finds many efforts like the following written in fifteen or twenty minutes :

How to play time

" One boy has to stand by the wall and asks the other boys a number and if its the right number he

[1] It has been shown that amongst group factors of which we have reliable evidence is a special logical ability . Burt emphasises too the possibility of a literary group factor amongst the attainments of school children.

has to chase the boy if he is had he is it again but if he dont have him well the other one is it and then he asks a boy a number if it is the right number he has to ask another boy if he is right he has to be chased by the other boy if he isnt had he is it again." [1] (C.A. 8·2.)

Not quite as weak grammatically are those whose composition is composed of three or four long "run on" sentences, as :

How to play schools

"Sometimes I have my little friends into my house to play schools I always be the teacher because I am bigger than them I let them do easy sums. Sometimes I make out that it is, Tursday, and we have drill it is very nice to have it I always make them laugh they make me laugh I know that. Mother always let them have tea with me after we have finished tea we go on with schools my father says that he will have a game with us when I tell him to do ading up sums or takeing away sums he always gets them right. My mother. . . ." (C.A. 8·10.)

As we ascend the mental scale a greater variety of games is mentioned and the methods employed in explaining them improve considerably. Amongst 9 and 10 year-old pupils the make-believe play activities are less often described, while games involving an element of mental alertness and concentration are introduced. Reference is made to odds and evens, two's and three's and hopping games ; more variations in running games are given while a few children tell how to play indoor games such as draughts, ludo and bagatelle. Even up to this mental level, however, the four faults of redundancy, unnecessary repetition of words such as "if," "and," "when," "gets" and "has," confusion in explanation, and long straggling sentences are still quite common.

1 "it" and "had" are play terms meaning, respectively, the chaser and the act of being caught by the chaser.

In the light of this observation it seems advisable to use some kinds of explanatory writing sparingly with young children, particularly with 7, 8 and 9 year-olds when one is encouraging them to master the simple sentence. The exception to this would be the explanatory or expository exercise based on simple activities performed by the pupils. A carefully planned programme of such exercises will produce rapid improvement in the simple sentence.

At the upper mental ages of 11+ to 13+ the explanations are usually a little more carefully developed, while the use of the short sentence for conciseness and clarity is a characteristic feature. The concrete example reproduced below is illustrative of this phase of development.

How to play " Hunt the Thimble "

" The game ' Hunt the Thimble ' is generally played indoors. As many people as one likes may play. All that is needed is a thimble.

" One of the players is chosen to be the hider of the thimble. All the others close their eyes while the hider hides the thimble.

" The hider must put the thimble where it can be seen such as on the corner of the mantle shelf. When the thimble is hidden the hider shouts ' Ready ' and the rest of the players start to look for the thimble. The person who spots the thimble quickly sits on the floor. . . . " (C.A. 12·3.)

Amongst senior girls indoor and party pastimes such as blindman's buff, postman's knock, charades, " how, when and where," appeal to a large number, whilst for others the outdoor sports of netball and rounders seem to be the most popular. The boys of these ages frequently describe cricket, football, or an interesting kind of organised game.[1] Abstraction naturally enters but little into the themes of

[1] Even here an inability to use a variety of synonymous words is noticeable. Discussion on and exercises relating to these points are found in later sections.

either sex, but occasionally one finds an abstract opening paragraph of this nature :

> " There are many games in which the competitors have to run about such as ' rounders,' ' he,' ' French touch ' and many others. Then there are the games where you don't have to run about such as table tennis, tiddly winks, and other exciting indoor games.
>
> " The game which I am going to describe is Netball. . . . " (C.A. 13·4.)

In general, the explanatory theme remains at all ages a critical test of logical analysis, a power which, to a varying extent according to the nature of the topic, is of fundamental importance in English composition.

Sentence Structure

An analysis of the sentence structure of the four types of composition at the various age levels was made. In the first place, length of sentence for boys and girls was ascertained. This is set out in the table below :

Table XXIX

Average Number of Words per Sentence from 2800 Compositions (200 per age group—50 of each type of composition)

Age.	Average No. of Words per Sentence.	
	Boys.	Girls.
7	7·2 ± 1·3	7·8 ± 1·6
8	8·2 ± 1·3	9·7 ± 1·5
9	10·6 ± 1·5	11·2 ± 1·6
10	12·4 ± 1·4	13·7 ± 1·7
11	13·5 ± 1·2	14·5 ± 1·4
12	14·7 ± 1·5	15·1 ± 1·8
13	15·1 ± 1·5	15·6 ± 1·7

These figures, which are similar to those obtained by Burt [1] and Sleight [2] (for pupils of 7 to 11+) reveal a slight

[1] *Mental and Scholastic Tests*, p. 410.
[2] G. F. Sleight, *The Diagnosis and Treatment of the Dull and Backward Child*, p. 309, Ph.D. Thesis in the University of London, 1932.

superiority of girls at all ages. From an average of 7 to 8 words per sentence at the 7 year-old level, the length of the sentence increases to 15 to 16 words per sentence at the 13 to 14 year-old level. The main value of these figures lies in the guidance they provide for judging normal sentence structure at various age levels. Furthermore, a knowledge of sentence structure is a rough guide to the selection of appropriate reading material for dull and backward pupils of various age levels. The second group of characteristics revealed by the examination of sentence structure was the nature of the sentences used at various age levels. In the main these characteristics from age group to age group were the same for all four types of composition. The only points of difference were the somewhat higher percentage

TABLE XXX

Type of Sentence. Approximately 2800 Compositions. 200 of each age group. 50 of each Type of Composition. Frequency of occurrence per 100 Compositions

Age.	Kind of Sentence.			
	Simple.		Compound—Complex.	
	Boys.	Girls.	Boys.	Girls.
7	80·4	70·1	20·6	29·9
8	53·7	40·2	46·3	59·8
9	40·1	27·3	59·9	72·7
10	32·3	18·9	67·7	81·1
11	18·2	11·3	81·8	88·7
12	9·1	7·1	90·9	92·9
13	6·5	4·3	93·5	95·7

of compound sentences used in the explanatory form of composition, and the slightly higher percentage of simple sentences used in the narrative type as compared with the three other types of composition. In estimating kinds of sentence used at different age levels it should be remembered that the figures for these only indicate broad generalisation for a particular *mental* age level. For example, most pupils of 7 and 8 use exclusively simple sentences, but some of the same age (but naturally of higher mental age) use a

proportioned mixture of simple, compound and complex sentences with good examples of clauses of time, place, reason and condition included.

At the *mental age* of 7 to 8 a large percentage of the compositions showed an exclusive use of the simple sentence. The remainder were compound sentences with an occasional use of the complex sentence limited to the relative clause or the clause of time. The common conjunctions introducing the relative clause are "that" and "while," and the favourite sentence linking for time clauses is "then." Occasionally, pupils at this age level use "if."

At the 8 to 9 year-old *mental* level the use of the simple sentence has already begun to decrease, and the compound form is found amongst 50 per cent. of the total compositions. The complex sentence has increased to approximately 30 per cent. in the written products—mainly relative, time and place clauses with the introduction of a few clauses of reason. The complex sentence is still more widely employed at the 9 to 10 year-old mental level, with the use of occasional clauses of conditions. At the 10 to 12 mental level the proportion of simple-compound and complex sentences is practically equal, and a certain variety in the use of longer and shorter sentences to give literary balance is evident in the better compositions. Approximately 20 per cent. of the sentences show the use of the relative clause. At the 12 to 14 year mental level there is a still greater increase in the use of the complex sentence, and further evidence of balanced sentences, inversions and participial openings.

CHAPTER XVIII

BACKWARDNESS IN COMPOSITION AND ITS RELATION TO MATERIALS AND METHODS

Part I

For practical classroom purposes an analysis of backwardness in composition is most useful if we consider the various factors involved in teaching composition, and if we show how paucity of effort and inaccuracy of expression in oral and written English may be minimised in spite of intellectual handicaps or cultural barriers. Consequently this chapter deals specifically with the selection of materials and methods in oral and written composition which can prevent backwardness and improve standards in English. Reference is made throughout to concrete cases of backward children revealed during the investigation.

Oral Composition

Most pupils in classrooms need more practice in oral English.[1]

"There is a widespread tendency in English schools to substitute written expression for oral expression too early and to overlook the great value of the systematic practice of this latter form throughout the whole of school life." [2]

Oral composition can also be more closely related to written composition—one should grow out of the other. This is particularly so with backward children for whom development in the content and structural aspects of language must proceed largely from an oral basis. The accompanying reading and spelling difficulties of many

[1] One research committee showed that out of twenty-nine social demands on language ability only one was of the written type (*Review of Educational Research*, February 1935).

[2] *Report of the Consultative Committee on Oral and Written Expression in English*, p. 10 (Training College Association, 1935).

pupils backward in written composition make it essential that maximum opportunity for directed oral expression should be given. On the content side, pupils should be provided with experiences, direct and indirect, that will form a foundation for expression, particularly as so many dull children are markedly handicapped by limited surroundings and still more by limited adult language influences. On the structural side, improvement in all aspects—sentence formation, grammatical usage, awareness of punctuation, use of words—will come almost solely from oral practice. If it is successful the work in oral English will have five values, namely :

(1) form a basis for written work ;
(2) provide information ;
(3) develop language technique ;
(4) extend vocabulary ;
(5) provide an expressional situation for the development of personality.

Not all oral composition need be a preliminary to written work. Some teachers of English have too long laboured under that impression and have forced the naturalness out of the speaking situation by requiring the material to conform to a certain pattern as a precursor to writing. Much valuable oral composition will not be directly followed by written work, although it may indirectly form a basis for written work at a later stage. Of these five objectives in oral composition, the last cited is perhaps the most important. Hence it is vital that the teacher should employ numerous situations of a varied and comprehensive kind to stimulate expression in oral English—not an easy task in view of the environmental limitations, the reading difficulties, and the self-consciousness that characterise pupils backward on the verbal side. To begin with it may even be necessary to train backward juniors to listen to speech and then require them to repeat sentences. The varied situations likely to stimulate oral expression are listed below in approximate order of usage.

Aids to Expression in Oral English

(1) *Talks about Pictures.*—Use three or four interesting pictures for each lesson and encourage pupils to provide descriptive sentences. Don't use only one picture, otherwise ideas concerning it are "worn threadbare" at the end of five minutes. Suitable pictures are to be found in *Pictorial Education* (Evans Bros.), *Picture Post*, *Illustrated Weekly*, *Post* and *Saturday Evening Post* (American), *Illustrated London News*, and sets such as *People who work for us* (Phillip and Tacey), *New Era Class Pictures and Charts* (Edited by Miss F. I. Serjeant, New Era Publishing Co.)

More use should be made of pictures with pupils backward in language, and teachers of these children should aim at compiling catalogued sets of pictures for their personal use.

(2) *Making Picture Books.*—Let pupils make picture books from coloured paper, newspaper picture pages and magazine covers, and encourage them to talk about their picture books with other pupils. A variation of this is to allow pupils to paint pictures and to talk about them. This can be a source of quite full oral expression with backward juniors.

(3) *Talks on Films.*—Talks on films seen recently are usually successful. Here the value of the projector and the epidiascope is also apparent.

(4) *Stories retold.*—A useful variation of the ordinary classroom treatment of the above is to read four or five very short stories (such as Æsop's fables), to divide the class into four or five sections, and then to proceed on group lines.

(5) *Conversation Groups.*—Group methods can be used similarly for conversations on selected topics, particularly home experiences; *e.g.*

"What I do on Saturdays."

"My dog."

Topics can be suited to members of the groups. Place some of the more able pupils in each group.

(6) *Word Box.*—From a box containing slips of paper on which are written nouns and verbs, pupils select a slip and then say two sentences about the topic.

(7) *Fifteen Minute Question Time.*—An interesting device is to have a fifteen minute question time twice a week. Any pupil asks any question of selected pupils in front of the class. It is advisable to have four pupils in front of the class at a time. If one pupil cannot answer the question then the other three in turn are given a chance to reply, and if they are unable to supply an answer the first-named pupil has to discover the answer to the question before next question time.

Here teacher aid, parent co-operation, and reading can all be used. It is stimulating to the class if the teacher keeps a record of the questions answered by each pupil in a term.

(8) *Directions.*—"Oral work in giving and following directions is exceedingly important. It is often lack of ability to give directions that differentiates the foreman from the labourer, and it is lack of understanding directions that loses the latter his job." [1] Directions can include finding articles in the room, in the cupboard, in other rooms, things to do in the hall, instructions that all the class must follow in playing a game, doing a simple exercise, etc. Here the use of a diagram about which oral instructions can be given for all pupils to follow is obvious. For example the teacher says :

> "Draw a plan of the schoolground. Draw the streets alongside the schoolground. Mark in all the school gates."

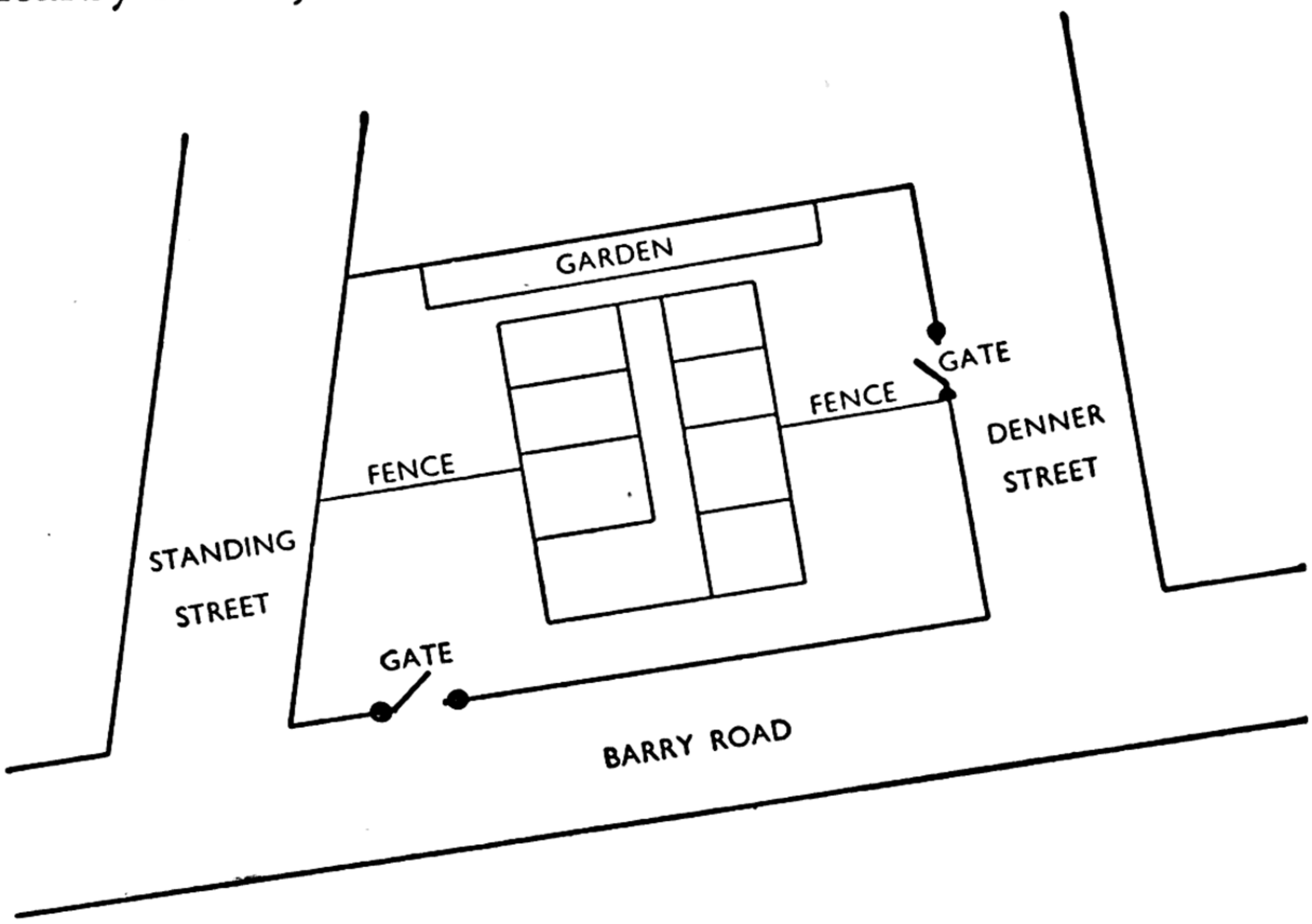
This is then drawn on the blackboard in co-operation with the class. Deficiencies in observation are made apparent to the pupils, and necessary redrawings are executed.

[1] *Teaching of Dull and Retarded Children*, p. 98, A. D. Inskeep (Macmillan & Co.).

Pupils are then encouraged to give directions for the class to follow. Thus different members of one backward class gave such directions as :

Draw the school in the playground.
Show the classrooms in the school.
Put in the trees in the playground.
Show the school garden.

This can be extended to drawings of the classroom, the nearby streets, etc.



(9) *Telling Simple Jokes.*—These are prepared before recounting, and can lead naturally to such oral exercises as :

" The funniest thing I ever saw."
" The most thrilling thing I know about."
" The greatest surprise I ever had."

(10) *Guessing.*—Allow pupils to describe common objects, animals or persons, without mentioning the name, the class being required to guess what or who it is. A variation

of this is the "What am I?" or "Who am I?" puzzle.

What am I?	Who am I?
I am tall	I am big
I am dark	I wear a uniform
I am dirty	I have a lamp
I am made of bricks	I have a number on my coat
I draw up smoke.	I direct the traffic
	I look after shops and houses.

Pupils are encouraged to compose these puzzles and are then allowed to read them to the class. The teacher should present a pattern of each kind before requiring the pupils to attempt their own puzzles.

(11) *Dramatisation.*—Dramatisation is too familiar as a means of oral English to require elaboration. Miming with actions, puppetry,[1] the dramatisation of everyday activities, of simple stories and historical scenes can be made the basis of much effective and stimulating oral expression.

A few points of warning are pertinent here. In dramatic work there should be careful preparation to ensure full value for oral English. Too much dramatisation degenerates into impromptu slang expression on the part of a few talkative children. Furthermore, insufficient use is made, in dramatisation, of everyday happenings which can be particularly valuable for backward pupils. There is no need to cram them with artificial dramatic material unrelated to their lives.

(12) *Descriptions of Actions or Experiments performed in front of the Class.*—To provide some of the very backward pupils with ideas for oral expression it is useful to allow pupils to carry out certain actions (tying up a parcel), or to perform simple experiments in front of the class (simple science or nature study). All pupils can then recount what they have actually seen.

[1] Puppetry, if properly managed, can be made a useful stimulus to oral and written English. See *The Education of Backward Children*, pp. 70-81, M. E. Hill (Harrap & Co., 1939).

(13) *Telephoning*.—For this, one can use a modelled paper maché telephone. The class should be taught how to use a telephone of the dial kind and of the manual kind, and how to look up numbers in a directory. Old copies of directories can easily be procured for this purpose. Then it is advisable to demonstrate with a pupil before requiring different members of the class to take turns in speaking. If carefully supervised this activity is suitable for group work with backward children.

The following exercises offer a variety of situations for telephone conversations in the classroom, but in all cases there should be a demonstration by the teacher and a pupil.

(*a*) Tell someone about a visit, an incident, etc.
(*b*) Send an order to a tradesman.
(*c*) Arrange to meet a person at a given place and time.
(*d*) (i) Call the fire station and report a fire ;
(ii) Call the police and report an accident ;
(iii) Call the ambulance and report an accident.
(*e*) Make a complaint about the telephone.
(*f*) Take a message for another person. Speaker repeats message—ask questions to make points clearer.
(*g*) Send an invitation to tea, to play a game, or to make a visit.
(*h*) Receive an invitation.
(*i*) Thank a person for doing something.
(*j*) Obtain information about trains.
(*k*) Find out how to use a new instrument (an electric clock, new push-button radio, cream machine, etc.).
(*l*) Send a message for someone else (inability to keep appointment, will help at school concert, etc., etc.).

The above exercises are found to be distinctly useful with all pupils, and can be made the medium for imparting a considerable amount of everyday knowledge that pupils should possess.

(14) *Impromptu Stories*.—A useful and interesting form

of oral composition for seniors is continuing an impromptu story started by one of the pupils.

(15) *Lecturettes.*—The lecturette period is one of the most stimulating oral English lessons. Pupils are encouraged to speak at first for two minutes and later for four or five minutes on topics of their own choice. The speaker selects a subject with which he is conversant and about which he wants to tell the class something. The teacher should sit at the back of the class, and should encourage other pupils to ask questions at the conclusion of the talk. Occasionally the teacher may open the question time.

It is amazing how good some pupils become at this work, and how naturally the question and answer situation develops. Pupils are taught to discuss matters rationally, logically and dispassionately with their fellows, and unless they receive this kind of training it is difficult to expect C and D children to show co-operation outside school, or in later years in their work, where they will think that the only way of discussing a matter is to see who can shout the loudest, or use the most " swear words."

For C and D classes we might easily dispense with one of the arithmetic lessons and substitute a lecturette period. In one " D " class of boys aged 12 to 14, with which I had several years' experience, much of the oral English was conducted on these lines. Boys would talk about their collections—stamps, shells, leaves, cigarette cards, mechanical toys ; about visits to various places ; about sport ; about interests such as meccano, keeping pigeons, model aeroplanes, camping, fishing, aeroplanes, trains, bicycles, cars, gardening, Boy Scouts, Boys' Brigade, keeping bees ; about topics on which they had recently acquired information. Sets of topics similar to these can be used with girls.

Pupils who do not wish to speak, because they have nothing to talk about, should be required to read a short simple description or account of an incident, an invention, etc., in a book or magazine and then be encouraged to retell the material. I remember how one dull boy, aged 12,

after several readings of selected material surprised himself and the class with a talk on " How a submarine works." [1]

Pupils can be shown how to develop talks logically by putting down headings of facts in order on a small piece of paper, which they may hold in their hand as they speak. The teacher should always show the pupil how he can improve his talk, and in the cases of failure, why the talk failed. Where there are numerous grammatical inaccuracies in the talk the teacher can afterwards point out to the pupil the few main ones. It is wise not to interrupt during the talks, otherwise confusion and inhibition almost invariably result. Better sentence structure can be encouraged by writing lists of conjunctions on sheets of paper and keeping them in a prominent place in the room. The outstanding result of this work, however, is the gain in personality development made by all pupils who have such lessons twice a week.

(16) *Visits to Other Classes.*—With older pupils members of one class may be allowed to visit another class to recount incidents or prepared stories. Preliminary introductions of the pupils by the pupils is a useful preparation for everyday situations :

> " This is Thomas Wilkins. He lives at —— and he has been at this school for four years. He is going to tell you about his trip to Southampton."

The introduction of speakers can be prepared beforehand.

(17) " *Picture-sentence* " *Books and* " *Thesis* " *Books.*—An interesting combination of very simple written English with oral English can be made by allowing every pupil—even the most backward ones—to compile a " picture-sentence " book. Each pupil selects a topic—" How films are made," " Lumbering in Canada," " Sheep-farming," " Apple Growing," " Hop Growing," " Coal Mining in Great Britain," " Cricket," " Water Birds," etc. He then collects pictures about the selected topic and pastes them into a

[1] For seniors see the series " Life in a Submarine," " With the R.A.F." etc., 1s. 6d. each (Raphael Tuck). These are simply written with numerous fine authentic photographs.

book. He must write one sentence about each picture. In addition to what the pupils can collect, the teacher should provide a considerable amount of material by obtaining newspapers and old periodicals from friends. A development of this is to allow each pupil to take a topic from history, geography, nature study, and to find out as much as he can about it, again supplementing any written work with pictures or diagrams. Each book is made the basis of a talk, and most pupils take a delight in the work, which I find is just as suited to dull as to bright pupils.

(18) *Activity Studies.*—The connection between projects, class activities and oral English is apparent ; but a successful development of this is found in the actuality work done in some schools.[1] Adults who can give first-hand information connected with a topic being studied are invited to talk to, and answer questions from, the pupils in the classroom. Here, for example, are some of the fifty questions asked by boys of a signalman, who came to a London Senior School to talk on matters relating to a project on transport. The answers given by the signalman follow the questions asked by the pupils :

(i) What line do you work on ?

The new Eltham line.

(ii) How many signals are operated from your box ?

Four in each direction. There are also dummy signals for points. There are two pairs of signals for every pair of points. In the cabin there are thirty-four levers.

(iii) Does one-two-three rings on the bell in the signal box mean there is a train on the line ?

Not necessarily. There are different codes for different trains. It is rather complicated. There are different codes for trains on branch lines, junctions and main lines. The ring of a branch line train is two-three, and the junction line train three-two. A parcel train is four-two-two.

[1] See for an account of the method, *Actuality Teaching*, G. J. Cons and C. Fletcher (Methuen & Co., 1938).

(iv) Why are signal boxes part brick and part wood?

This is for cheapness of construction.

(v) Do you fire fog signals?

We don't fire them but it is done by a platelayer. He puts a detonator on the rail. The detonator is to call the driver's attention that the line is not clear. At Eltham Green and places with a large density of traffic, it is done by mechanical means. We don't do it.

(vi) Why are there lights in some places and signals in others?

Do you mean coloured lights? This depends on the station or line.

(vii) Why are there plates along the lines with numbers?

I am not sure what you mean. All things are numbered, tunnels, gradients, mileage. Every quarter of a mile is shown on the milestones.

(viii) How far apart are signal boxes?

That depends on the layout of the station. The home station is the first the driver would meet after passing us. Then there is the advance signal to prevent crossing over points. It is left to the discretion of the Company.

(ix) What are catch points? Are they worked from the cabin?

Some are worked from the cabin. Where have you seen them? (At Bellingham Station.)

Oh well, I'll try to explain. Should a train be on catch points it is thrown off, so making its own smash. It is so that a goods train won't crash into an electric train. It is only for goods traffic. If there were no catch points the train would keep running and hit the electric train.

(x) Why is there a white dial?

I think you mean the dial that is an indication to signalmen that there is a train waiting.

(19) *Educational Visits.*—More of these should be taken with all pupils, but for backward children they are essential. They provide an exceptionally stimulating basis for oral work. With small groups of backward juniors even visits to a railway station, a market, a fire station, a large garage, all extend their experiences and provide the basis for natural, sensible English.

Preparation for the visit should be made beforehand. Pupils should be called on afterwards to give their individual observations. The general principles should be clear. The situation should be made natural and impelling, and as many pupils as possible should be allowed to speak. Close connection between the topics and the everyday experiences of the pupils should be made.

Errors in Oral Composition

Reliable research results show that errors in oral composition for various groups of pupils, with different subjects, fall fairly consistently into these groups :[1]

(1) From 49 to 62 per cent. of errors are in verb forms (subject verb relationship, tenses, etc.).
(2) From 9 to 21 per cent. of errors are in redundancy.
(3) „ 10 „ 14 „ „ „ „ pronouns.
(4) „ 8 „ 14 „ „ „ „ double negatives.
(5) From 1 to 5 per cent. of errors are in confusion of adjective and adverb.
(6) From 0 to 1 per cent. of errors are in confusion of preposition and conjunction.

The following specific errors need most attention.

Schedule N

Schedule of Common Errors in Oral Composition

(*a*) confusing " saw " and " seen." (I seen . . .)
(*b*) plural subject with singular verb. (The boys was . . .)

[1] Quoted from " Summary of Investigations relating to Grammar, Language and Composition," pp. 72-73, R. L. Lyman (Supplementary Educational Monographs, Number 36, January 1929).

(*c*) double negative. (I didn't do nothing.)
(*d*) confusion of "come" and "came." (He come home.)
(*e*) " " "them" and "those." (Them books . . .)
(*f*) confusion of "can" and "may." (Can I leave the room ?)
(*g*) didn't have no. (I didn't have no dinner.)
(*h*) use of "do," "did," "done." (He done his work good.)
(*i*) use of "go," "went," "gone." (After we gone down the road.)
(*j*) subject of verb not in nominative case. (Her saw the accident.)
(*k*) adjective for adverb. (She sings nice.)
(*l*) This here. (This here pen is no good.)
(*m*) didn't ought to. (She didn't ought to do that.)
(*n*) Bob, he went without me.
(*o*) "ain't." (It ain't me.)
(*p*) "what." (Will you have the one what I brought.)
(*q*) "That there." (That there book is not mine.)
(*r*) "give" for "gave." (She give me a shilling.)
(*s*) "off" for "from." (He took the apple off her.)
(*t*) "lay" for "lie." (He had to lay still.)
(*u*) "is" for "are." (Those books is for you.)
(*v*) "hisself," "theirselves." (He hurt hisself. They helped theirselves to the apples.)
(*w*) "might of" for "might have." (He might of seen the ball.)
(*x*) "ain't got no." (He ain't got no paper.)
(*y*) "nothing" and "anything." (He hasn't got nothing.)

These twenty-five common errors comprise nearly 75 per cent. of the mistakes made by pupils in their oral composition. Such an error list is invaluable to teachers who should compile lists of sentences giving pupils practice in the right use of the forms in which they make errors. Such exercises can be taken orally. Teachers might also remember that from 50 to 80 per cent. of the errors in verb forms are connected with the verbs "to be," "to go," "to see," "to do," "to come."

In the correction of errors in oral English it is as well not to correct errors too openly, nor to correct too many at once. Two or three errors may be taken from the above list each week and the remainder left for the time being. Individual pupil discrimination can be used also, particularly if English cards for group work are prepared.

Punctuation

Oral composition can be used as a means of teaching punctuation in preparation for written work. Sleight, working with backward children, says, " Experiments with the upper section of the experimental class proved that punctuation may be more successfully taught through oral presentation relying on the ear catching the rhythm of the paragraph, than through the customary visual presentation and analysis according to the sense of the passage." He gave the pupils cyclostyled copies of unpunctuated sentences and then read them through with the children " with an exaggerated inflection " and pupils were required to put in the punctuation marks. Then the teacher read " in a natural voice " a short, easy paragraph, and the class were required to write it out in their own words, to read it through in a way similar to that previously done by the teacher, and finally to insert the punctuation marks. Sleight concludes: " The children were interested in the method, and after regular practice for two or three weeks there was a decided improvement, both in written punctuation and in phrasing in oral reading. Nor were the advantages of the method confined to punctuation. The fact that the class had acquired the habit of reading the composition aloud to find its natural breaks, incidentally resulted in the discovery of other mistakes, notably omissions." [1]

Written Composition

Many teachers assert that written composition, depending as it does upon all aspects of English, is the most difficult

1 " The Diagnosis and Treatment of the Dull and Backward Child," G. F. Sleight. (Unpublished Ph.D. Thesis in the University of London Library.)

subject to teach, while not a few pupils admit that it is the subject they like least. Between the ages of seven and thirteen one finds too large a proportion of boys and girls who would sooner engage in almost any other activity than write a composition. Yet many of these same children will conduct a fairly free and full conversation provided the topic is related to their natural interests and activities. This indicates then the key to two factors which contribute towards paucity of effort in composition, namely :

(1) Uninteresting topics, *i.e.* unrelated to life activities.
(2) No stimulus or audience situation for writing the composition.

In written English pupils are too often asked to carry out tasks which are uninteresting and motiveless. Unless composition topics are related to situations and activities of everyday life, pupils cannot express themselves adequately and they lose interest. The slogan, " experience before expression," important as it is for all pupils, is doubly important for those backward in English. Therefore, we must frame the composition syllabus to provide plenty of practice in writing about everyday interests and experience. We must widen pupils' first-hand experiences (allowing them to do things, construct things, observe activities and make visits). Where " there is a special difficulty confronting the teacher whose work lies among children, whose circumscribed environment limits their experience and vocabulary, we urge that in these cases the need is the more pressing for the teacher to make it his business to provide wider direct experience for his pupils by every means in his power." [1] We must provide them with second-hand experiences (through pictures, films, story-telling and reading). If we keep in the foreground just these three things,

(1) everyday experiences and interests,
(2) specific first-hand experiences,
(3) second-hand experiences,

[1] Suggestions in *The Training College Association Report on Oral and Written English*, p. 6.

in dealing with the written work of our pupils, then there is every possibility that they will like their work in English and that we will succeed in preparing them for life.[1] Furthermore, we are not likely to fall into the error of giving them artificial lessons in formal grammar or useless jugglery with words, neither of which activities teach children to write.

Topics

Research has shown that of topics selected by the children themselves, those most favoured by junior pupils (ages 7, 8, 9), are :

(*a*) Personal experiences.
(*b*) Seasonal happenings (Guy Fawkes Day, Christmas Day, etc.).
(*c*) Stories read or told.
(*d*) Play experiences.
(*e*) About other children.
(*f*) About adults.
(*g*) Animals (mainly pets).
(*h*) Fanciful characters.

For teachers of junior pupils this is a suggestive list that might form a guide to the selection of topics for written work. It is as well to formulate the topic so that it has a personal appeal or a real contact with experience.

" What I did on Guy Fawkes Night."
" Tell me about your cat."
" What do you play on Saturdays ? "
" Write six lines about your best friend."
" Think of the policeman you pass each day. What does he have to do ? "
" Write a letter to your aunt (uncle) telling of your visit to the pictures (Zoo, swimming bath, etc.)."
" What I do during playtime at school."
" My cigarette cards."
" How I collect stamps."

[1] See *Citizenship through English*, by M. J. P. Laurence (Oliver and Boyd Ltd.) for many excellent suggestions for the English curriculum in senior schools.

Long compositions should not always be expected from children. Much useful work arises from short compositions.

For senior pupils of 11+ onwards, research reveals [1] that the best-liked topics are those dealing with :

(*a*) Personal experiences.
(*b*) Travel.
(*c*) Adventure.
(*d*) Outdoor activities.
(*e*) Athletics and sports.
(*f*) Literature.
(*g*) Animals, particularly stories about them.
(*h*) Home life.
(*i*) Hobbies and how to do certain things.
(*j*) Current events.[2]
(*k*) Autobiographies and stories of famous people.
(*l*) Imaginative happenings.

Those topics almost universally disliked are connected with :

(*a*) Health talks.
(*b*) Social problems.
(*c*) Fairy tales.
(*d*) Civics.
(*e*) Explanations of sayings or proverbs.
(*f*) Certain descriptions of articles, *e.g.* an umbrella, a fountain-pen.

Here, again, this list is closely related to the actualities of life and can be made the basis of a live composition curriculum. With both junior and senior pupils the

[1] Suggestive researches on composition content are : "Content and Form of Original Compositions dictated by Children from Five to Eight Years of Age," Jean Betzner (Contribution to Education No. 442, Teachers' College, Columbia University, New York 1930). "Written Composition Interests of High School Pupils," J. H. Coleman (Teachers' College, Columbia University, New York, 1931).

[2] Helpful information on this recently appeared in a series of articles in the *Senior Teachers' World*, December 1938 to April 1939 (Evans Bros.). "The Press in School—How the Teaching of English can be stimulated by Class Study of Newspapers," by J. Hywell Williams.

chief reasons given for writing a composition on selected topics are :

(*a*) Pupils like the topic they write about.
(*b*) They have some knowledge about it.
(*c*) They expect or hope to see or do things they write about. In other words, the writing provides a kind of mild wish fulfilment and hence there is pleasure in writing about it.

The exact title of the topic is of immense importance. If the personal note can be introduced into the topic, pupils write with much greater freedom.[1] Here, of course, the letter-writing form, particularly for backward children, is essential. There is more appeal in, " Write a letter to your uncle (or aunt) telling him about your bicycle or stamp album," than " Describe a bicycle " or " Write about stamp collecting."

Projects, Activities, Centres of Interest

It does not matter much what you call them—projects, activities, units of work or centres of interest—for most teachers these terms mean the same. They mean the method of taking a topic and trying to find out and work out, with the pupils, as much as possible about it in as many fields (art, handwork, language, arithmetic, music, geography, literature, history) as is possible in the time at the disposal of the class, according to the intellectual and scholastic abilities of the children, to the materials obtainable, and to the directing skill of the teacher. The method has both ardent supporters and strong opponents. For providing real experiences for children, introducing zest, enthusiasm and interest into the classroom, the method stands head and shoulders above any other form of teaching. What is, however, just as certain is that, although the project method can revitalize the entire curriculum, it cannot entirely teach the techniques of arithmetic, reading

[1] See *The Teaching of English*, W. S. Tomkinson.

and written English. These must be mastered in set lessons and then given interesting application and expansion in projects.[1] It is futile to expect a project to teach techniques, and it is in this respect that the too ardent supporters of the method do much harm. A very backward reader in the junior school will not learn to read through projects—he needs frequent help with appropriate material. Most pupils need help with various aspects of learning to write English, in addition to the practice gained in connection with projects. On the other hand, the teacher who neglects to use the project method is missing the most vital stimulus in the whole range of teaching methods.

Project work can provide intimate contacts with oral and written English. In planning a project[2] we should endeavour to

(1) have it closely related to a real life situation ;
(2) suit it to the child's social and mental development ;
(3) provide for individual and group work ;
(4) provide for the fundamental subjects ;
(5) give maximum practice in oral and written English, including dramatisation and reading ;
(6) Introduce as many experiences as possible into the activity—making visits, constructing, illustrating, keeping records, measuring, writing letters and paragraphs, etc., finding out information from other sources.

The following suggestions for centres of interest are given simply to show the *possible oral and written English* that might arise from the work. No reference is made to the other activities of handwork, arithmetic, etc.[3]

[1] As Miss Hume has shown, " A great stimulus is often given to interest and skill in reading through the medium of the project." Teachers of backward pupils in junior classes will derive much help from Miss G. Hume's book, *Learning and Teaching in the Infant School* (Longmans, 1938).

[2] Helpful information on methods and materials will be found in *Activity in the Primary School*, M. V. Daniel (Basil Blackwell, 1947), and *New Teaching for a New Age*, A. H. T. Glover (Nelson and Sons, 1945). Particularly chaps. 7-10.

[3] For further suggestions on project work see *The Decroly School*, A. Hamaide (Dent). *The Child Centred School*, Rugg and Schumacker (Teachers' College Columbia publication). *Projects in the Educa-*

PROJECTS FOR JUNIORS

PROJECT 1

An Environmental Study of the Neighbourhood

This should be largely of an explorative and descriptive nature.

Information obtained from parents and grandparents can be transmitted orally to the group or class.

Pupils can write short descriptions of occupations, streets, buildings, etc., with which they are familiar or with which they become acquainted through visits. Models, maps, drawings can be made, and descriptions, however short, can be appended.

Sets of questions can be given to the pupils in different groups, and these can be answered.

Where does the town (village, suburb) get its water from?

How many churches are there in ——?

Where is the nearest fire station to the school?

How many engines are there at the fire station?

How is the town kept clean?

Visits can be made and oral and written English naturally come from these.

PROJECT 2

Birds that we see in our Locality

Each pupil tells the names of birds he has seen and describes them.

List is written out.

Letter written to Bird Society for more information.

Cigarette cards collected. Large coloured pictures displayed.

tion of Young Children, H. Gull. *Instruction in the Primary School*, G. Sloman (Macmillan). See also Miss I. F. Serjeant's stimulating chapter on "Group Studies and Projects" in *The Child under Eight at School* (The Gresham Publishing Co.), pp. 62-84, vol. iv. Much of the material here discussed is applicable to backward juniors.

Drawings and short descriptions made by pupils.
Bird Chart is kept.
Each pupil gives short talk on one bird.
Bird stories and bird poems relating to the birds are selected ; *e.g.*

Sea Birds : "On the Great Black Rock," by O. Bowen (Univ. of London Press).
Field Birds : "That's Why Stories," by J. M. Merson (Oliver and Boyd Ltd.).

Visits made to parks or country to see birds. Oral and written descriptions.

Project 3

Life in a Circus

Making tent, seats, animals.
Writing out names of animals.
Oral and short written descriptions of animals.
Circus played by members of class.
Invitation sent to other class members.
Reading about circus animals, particularly sagacity of certain animals.
Talks about the stories.
Full use of pictures for oral work.
Reproduction of some stories, written work.
Dramatisations.
Introduction to interesting books, such as *Pilgrims of the Wild*, by Grey Owl (Lovat Dickson), *Wild Life Stories*, by Mortimer Batten (Collins), *Stories of the Wild*, by Mortimer Batten (McDougall), *Zoo Tales*, First, Second and Third Series, by F. H. Gillespie (Oliver and Boyd Ltd.), Père Castor's Stories of Wild Animals (Allen & Unwin), *Bru the Grizzly*, and other stories, by C. B. Rutley (Macmillan).
Introduction of dramatisation and puppet shows from stories.
For teacher, see Zoo Project, Pub. Froebel Society, London.

Project 4

Fruit

This is a most suitable project for juniors, and introduces naturally a considerable amount of geography, history, arithmetic, art, in addition to varied oral and written English.

Groups of pupils find out the kinds of fruit in the shops. Complete list is made from combined efforts. Some children are set to discover :

(*a*) fruits which grow in England ;
(*b*) fruits which we have in summer only.

Other groups discover prices.

List of prices are made (simple shopping).

Fruit shop is set up.

Boys undertake making of display stall from boxes.

Other pupils collect fruit wrappers to find out from where the fruits are imported.

Reading of *Story Books of Things We Use*, by M. & M. Petersham (Dent).

Each pupil given map of world.

Countries from which apples, oranges, grapes, lemons, etc., are imported are marked on map. Oral discussion.

Preparation of short talks on cider making, jam making and canning, etc.

PROJECTS FOR SENIORS

Project 1

An Environmental Study of the Neighbourhood

(*a*) Historical.
(*b*) Geographical.
(*c*) Social.

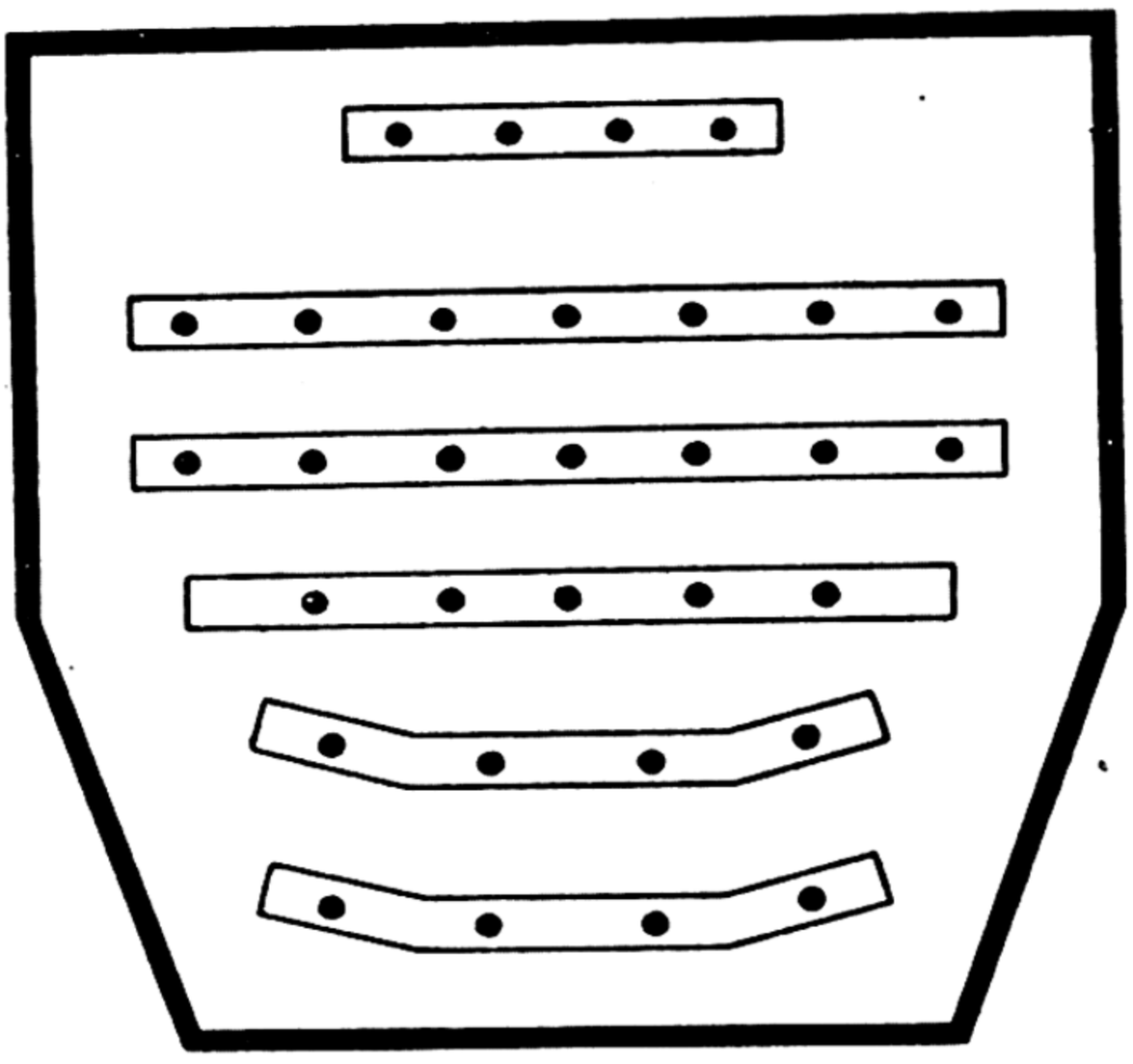
This can be conducted on a group basis, and both oral and written English can be distributed according to group needs.

Project 2

From Sheep's Back to Overcoat

Searching for information about life on a sheep station in Australia (group work). Descriptions written together with pictures collected. Models made, together with captions and sentence descriptions.

Wool sales described, dramatisation of wool sale by pupils.



Auctioneers and Clerks.

Buyers with catalogues.

Voyage of wool home to England.
Description of methods of handling.
Short papers on ports of the voyage are read by pupils.
Arrival in London.
Diagrams.
Woollen mills in North. Sets of questions for answering.

Pictures.

Group work on various aspects of weaving.
Cloth produced.
Group work, writing about qualities, selling; wholesale and retail work.
Shops.

Project 3

Food Preservation

Lists made of the foods preserved.

Getting lists from shops. Enquiries at home. Writing and spelling of words connected with lists.

Collection of wrappers, writing note under each. Countries from which foods come. Maps, captions.

Methods of food preservation.

(*a*) Meats.

(*b*) Fruits, vegetables.

Group work.

Short papers by pupils.

Collection of pictures. Oral English based on pictures.

Lists of questions. Answers to these obtained by pupils from various sources.

Reading about above.

Library research.

Project 4

Aeroplanes

Visit to nearest aerodrome.

Examination of aeroplane.

Study of mechanism.

Different types then considered.

Each boy starts aeroplane book with cuttings, pictures, photos, etc.

Sentences written about each picture.

Military and civil types.

Markings of different countries.

Large map constructed.

Chief air routes plotted. Times, ports, etc. Oral and written English on Empire air journeys.

Exhibition of models of main types.

Construction of miniature aerodrome, hangars, etc., etc.

Oral English through discussion of planning. Group work.

Dramatisation of air journey to Australia.

Throughout all projects full use should be made of good pictures for oral and written English.

Perhaps the outstanding value of any form of project is its naturalness, for children obtain maximum practice in oral and written English while deriving full satisfaction from the major task in hand. They do their English without realising it, and the distaste associated with some of the older, more formal and artificial approaches disappears. In this respect it is interesting to note recent changes in the nature of English texts. Three very useful texts for Senior English, all of them based on and centring round the life of the child, are: *Direct English*[1] (3 books), *Civic English*[2] (3 books), *Everyday English for Seniors*[3] (3 books). All of these introduce much valuable information and associated exercises on such things as post offices, markets, fire stations, advertisements, highway codes, libraries, holidays and guide books, using the telephone, hobbies, cycling, elections, methods of travel, catalogues, insurance, lighting, savings banks, aeroplanes, visits, broadcasting, country life, sports, local history, telephone exchanges, etc., etc.

American texts go even further and centre an extensive amount of the English around even more comprehensive topics.[4]

A series which attempts to use the everyday surroundings of the pupil and to extend his knowledge of it is *Plain English*.[5] These are specifically for more backward pupils.

Range in Written English

Before considering in detail the use of models, methods of correction, and teaching devices for the development of

[1] *Direct English*, Books I, II and III, by M. M. Lewis and A. H. Stewart (Ginn & Co.).

[2] *Civic English*, Books I, II and III, by C. M. Bennett and H. R. Bennett (A. & C. Black Ltd.).

[3] *Everyday English for Seniors*, Books I, II, III, by G. T. W. Susams (Oxford University Press).

[4] *Elementary English in Action*, by R. W. Bardwell, Ethel Mabie and J. C. Tressler (D. C. Heath & Co.). *Daily Life Language Lessons*, R. L. Lyman, R. Johnson and L. McGregor (Ginn & Co.).

[5] *Plain English* (4 books), J. R. Crossland (Collins Press).

sentence structure, grammatical usage, and aids to creative expression, it is vital that we should review the range of ability and the general difficulties presented by class units in the teaching of written composition. Grading of pupils into A, B and C classes helps materially in the formulation of English syllabuses, but in many schools numbers do not permit of very homogeneous class groupings, and ability in written English in one class ranges over five or more mental years. Illustrative of this point are the following compositions which came from the same class in a small Junior School.

J.1. Alice A. Age $8\frac{8}{12}$

Home

My mother is cock the bina my dolls play some times. Sometimas I go upstimes and some times back doll and ball.

J.2. Joan D. Age $8\frac{9}{12}$

Home

Our home is very cosy although it is poor. Mother and Father work hard to keep it tidy. Father is always trying to invent something new. He made a safe not long ago. Once when nothing to do he even made a dolls-house with a dresser and cupboard under-neath. Soon after a dolls-cot almost large as a babies. While mumsy (that is the nickname that my sister gave her) sits and machines, knits and of course does all the housework Pat and I help her when ever we can we think it is great fun. We are always busy what with either poetry, plays, sometimes we find time to knit. My sister is only four years old and she makes us roar with laughter when we are round the fire on Sunday. She does about six stitches, and gets her wool caught round the leg of the chair and the cat gets hold of it and there's Pat jumping up and down trying to get her wool away. Often enough we read. Dad his

cowboy tales, Mumsy her magazines, I read school-girls stories, and history books, Pat her fairy tales. The house is so still you could hear a pin drop.

Both compositions were the product of thirty minutes' work, but whereas the former does not reach an average seven-year-old standard, the latter is comparable with the compositions of pupils of mental ages 12 to 13. Thus there is a range of ability in written English of practically six years. Nor does this represent an exceptional set of circumstances, for there are many classes in elementary schools where the range in composition ability is almost as great. Amongst the Senior School pupils there are some who write like this :

S.1. Len. S. Age $13\frac{4}{12}$

Home

My home is in Dephed and in door we have got a lavertry and my street called Glenville Grove it is not big house every night I go out with my mother down my aunt at woodpecker for a little while becous if I stay at home my little brother plays with the fire.

In the same class are pupils whose written work is of this standard :

S.2. Eric B. Age $13\frac{10}{12}$

There are various kinds of homes, some big, some small, some spacious, some cramped, but no person in the world can say anything better about a home than the person who lives in it. The home that I live in cannot be called large, but it is big enough for my family and all the necessities of life. . . . (280 words).

There are many classes containing pupils like Alice A. and Len S. who cannot write a simple sentence. They lack ideas and possess a pitifully inadequate technique for

expressing the few thoughts they do entertain. Small groups of such pupils are not infrequently found in the same class with pupils like Joan D. and Eric B., whose power of written expression is better than that of many adults. Yet we find thousands of classes containing pupils of similar widely ranged abilities all doing exactly the same written English —all attempting the same composition, all doing the same exercises in punctuation, grammatical usage, word study and so on.

Often the work is far too difficult for the Lens and Alices, they struggle blindly and hopelessly along, while for the Erics and Joans it is a sheer waste of time. They have already used in their written work all the forms of punctuation and grammatical usage that the very exercises to which they are submitted are designed to correct. Yet the solution is obvious. Either organise the school so that heterogeneous discrepancies do not occur, or else organise the class into sections and modify the syllabus accordingly so that children get what they can do, what they want to do, and what will be useful and practical for later life.

The means of solving the problem are, however, not sufficiently widely used. Occasionally one finds in a Senior School cross classification or organisation of the school into English sets. Each English class contains pupils of approximately the same English attainments, irrespective of their actual ages or register classes. All the Lens and Alices would then be in one English group together, while all pupils of the calibre of Eric and Joan would be found in another group. The usual procedure, where cross classification is adopted, is to give all pupils in the school a series of tests in English—written composition, punctuation, grammatical usage, use of words, reading comprehension and miscellaneous English exercises. The total marks for each pupil are obtained and the pupils are then drafted into groups irrespective of register class location. Thus in one large Senior Boys' School (of 11 classes), where this organisation for both English and Arithmetic has been in force for several years, the total marks from all the pre-

liminary English tests were seven hundred. The English groups were then made up as follows :

Range of Marks.	New English Group Designation.	New Boys just Admitted.	Pupils Drawn from Register Classes of: [3 = 3rd Yr. Pupils; 2 = 2nd Yr.; 1 = 1st Yr.]
663-525	$3A_1$	...	$3A$, $3B_1$, $3B_2$, $2A_1$ $2B_1$
528-463	$3A_2$	...	$3B_1$ $3B_2$, $2A_1$ $2B_1$ $1A$ (3 pupils)
460-425	$3B_1$	...	$3A_1$ $3B_1$ $3B_2$ $2A_1$ $2A_2$ $2B_1$ $2B_2$ $2C$ (2 pupils) $3C$ (1 pupil)
418-375	$3B_2$	...	$3A_1$ $3B_1$ $3B_2$ $2A_1$ $2A_2$ $2B_1$ $2B_2$ $2C$
374-330	$3C$	(6)	$3B_1$ $3B_2$ $2A_1$ $2A_2$ $2B_2$ $1A$ $1B_1$ $1B_2$ $1A$ (1 pupil)
287-218	$2A_1$	(3)	$3B_2$ $2A_1$ $2A_2$ $2B_1$ $2B_2$ $1A_1$ $1B_1$ $1B_2$
330-290	$2A_2$	(6)	$2A_2$ $2B_1$ $2B_2$ $2C_1$ $1A$ $1B_1$
227-145	$2B$	(22)	$2B_1$ $2B_2$ $2C$ $1A_1$ $1B_1$ $1B_2$
145-57	$1A$	(13)	$1A_1$ $1B_1$ $1B_2$ $2C$
56-0	$1B$	(8)	$2A_2$ $2B_1$ $2B_2$ $2C_1$ $1A_1$ $1B_1$ $1B_2$ $3B_2$ (1 pupil)

The effect of the regrouping and the greater homogeneity achieved can be seen from the following diagrams of two selected English groups.

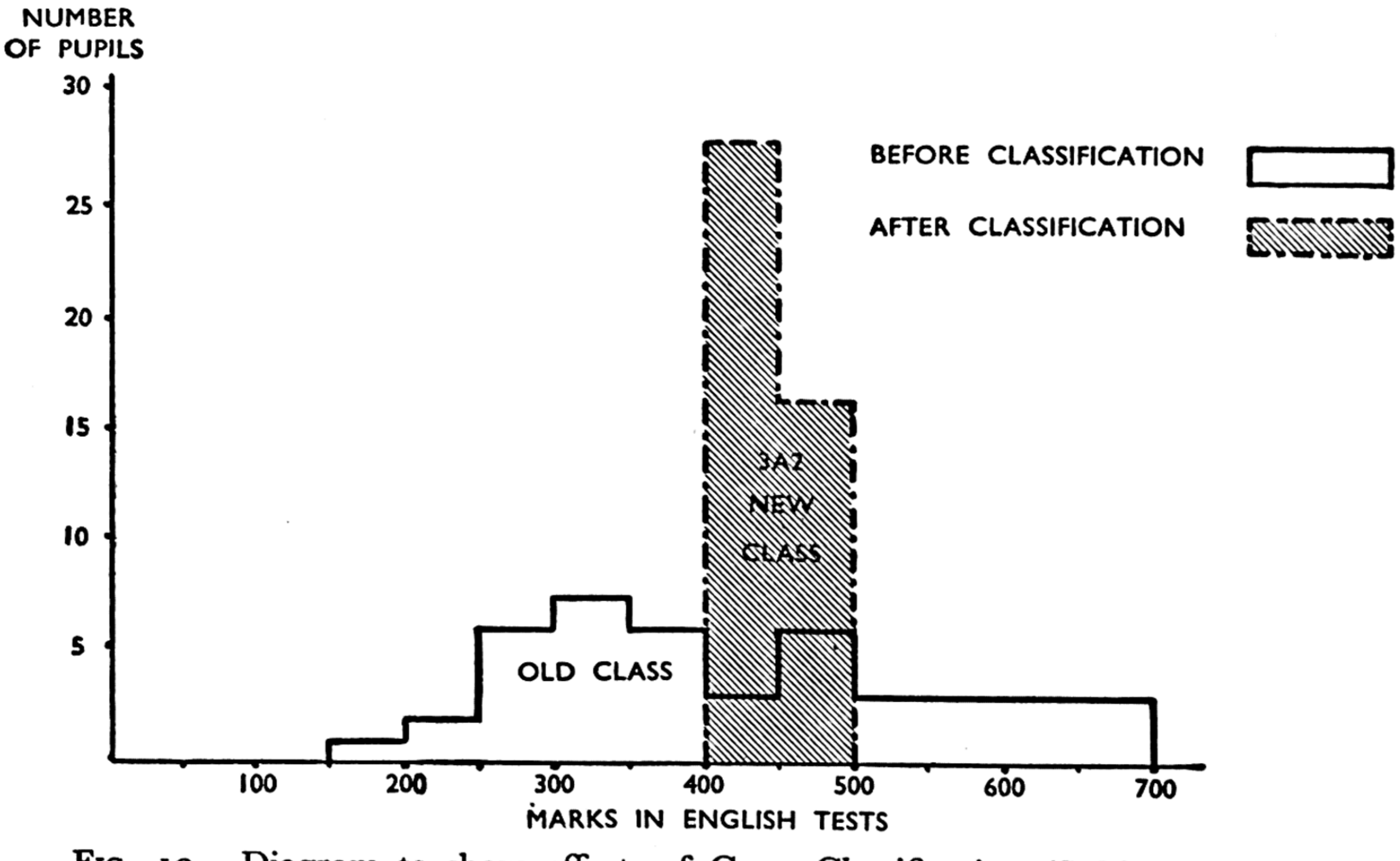


FIG. 10.—Diagram to show effects of Cross Classification (Subject Sets) in English.

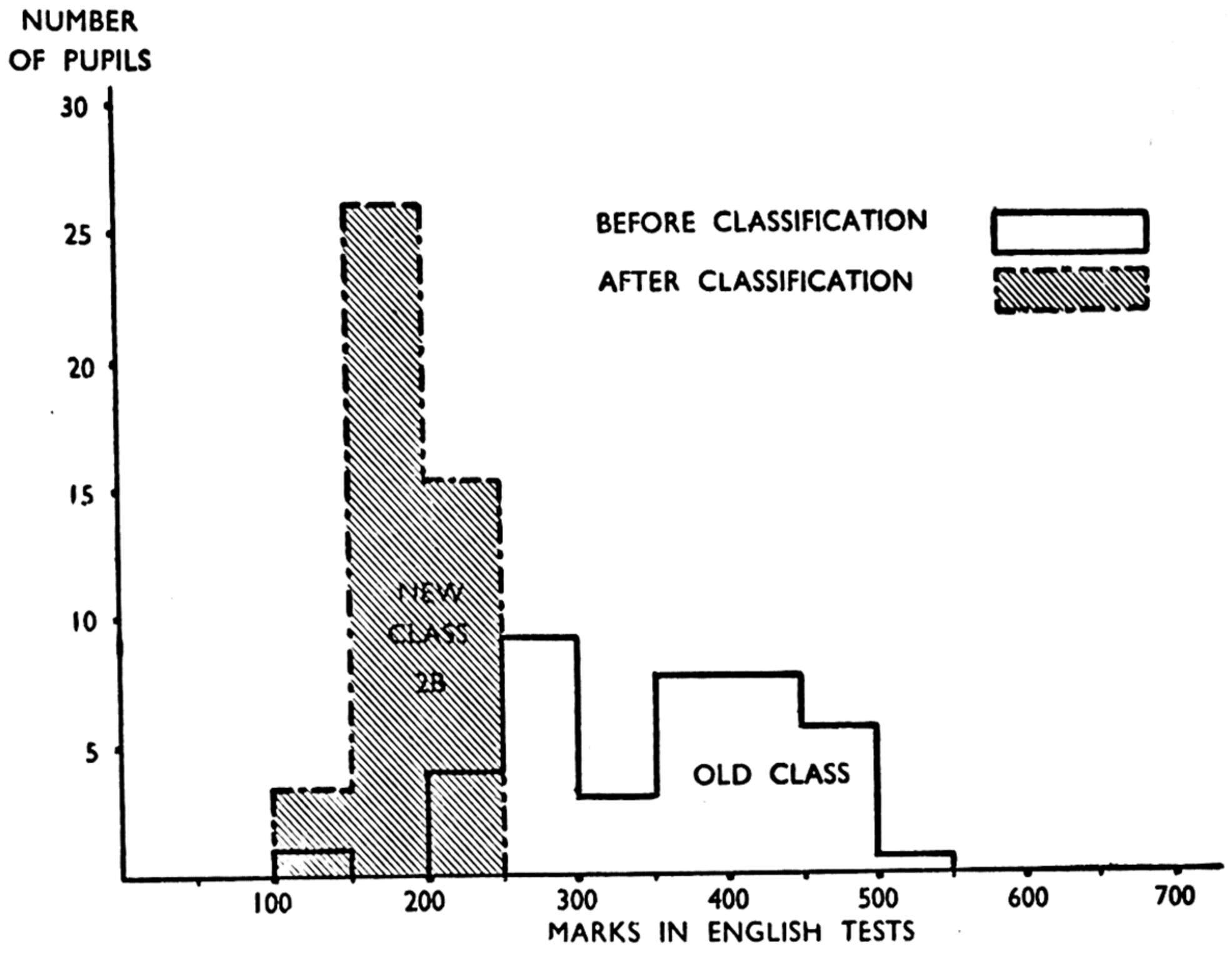


FIG. 11.—Diagram to show effects of Cross Classification (Subject Sets) in English.

The homogeneous grouping allowed for slightly larger classes (forty-eight pupils) amongst the better scholars and somewhat smaller (thirty to thirty-four pupils) amongst the really poor groups, where more individual help was required. The group represented by the marks 56-0 (thirty boys aged 11, 12 and 13) was really a dull and backward class in English, but instead of being scattered throughout eight different classes, they were gathered into one group where much more effective individual consideration could be given to them. For most of them, their English lessons consisted mainly in teaching them to read and to write simple sentences.

Naturally, such grouping means that all classes must take English throughout the school at the same time. In this case it was the first hour every afternoon in the week. One disadvantage was the fact that pupils went to woodwork by register classes and hence there were five to eight boys away from three or four different English groups most afternoons. An attempt was made to compensate for this lost time on a Friday afternoon.

My own conclusions, after close contact with the experiment for over four years, are that a thorough-going scheme of cross classification does not favour the teaching of English (a subject which pervades the whole curriculum and which should be the concern of every class teacher). Improvement in English, spoken and written, should be the primary concern of a class teacher, and dividing pupils into English groups tends to destroy that continuity so necessary to progress in the subject. Moreover, the English lessons seem to become scrappy and somewhat formal. They lose vitality and coherence. Boys who are continually needing help with English, even in history and geography lessons, are deprived of that additional class teacher aid.[1] On the other hand, it must be admitted that for the two lowest English groups, in the school mentioned above, whose English curriculum largely became a reading curriculum, the scheme was particularly successful. They were taught the most important thing in school life, namely, ability to read, and it is doubtful if many would have achieved this under an ordinary class organisation. Thus it is possible that a compromise of cross classification into English sets is beneficial for "C" pupils, so that all those requiring help in reading and writing simple sentences, irrespective of their age, may be grouped together.

Class Sections

The other solution to the problem of the wide range of English ability in classes is sections within the classes—a procedure common enough in arithmetic but not used sufficiently in English. Yet classes where sectioned work is properly organised show that it is a most effective solution.[2]

[1] At the same time results showed that arithmetic gains markedly from such an organisation—no doubt this is due to the more objective nature of arithmetic, to the specificity of instruction in it, and to the fact that the arithmetic of the children is very largely limited to the lessons given in school, a condition which is very different with English.

[2] Controlled experiments, clearly indicating superiority of sectioned teaching, compared with class teaching, have been conducted by Santee and Shepherd. A. M. Santee, "Results of Classification of Pupils Based on

Results during the present research reveal that division into three sections is most practical. These are :

Section A.—Pupils whose written English is very good both in ideas and in technique.

Section B.—Pupils who require some help either in the creative or technical aspects of written English.

Section C.—Pupils whose written English is very weak in both expressional and mechanical aspects (*i.e.* of the calibre of Alice and Len, pages 442, 443).

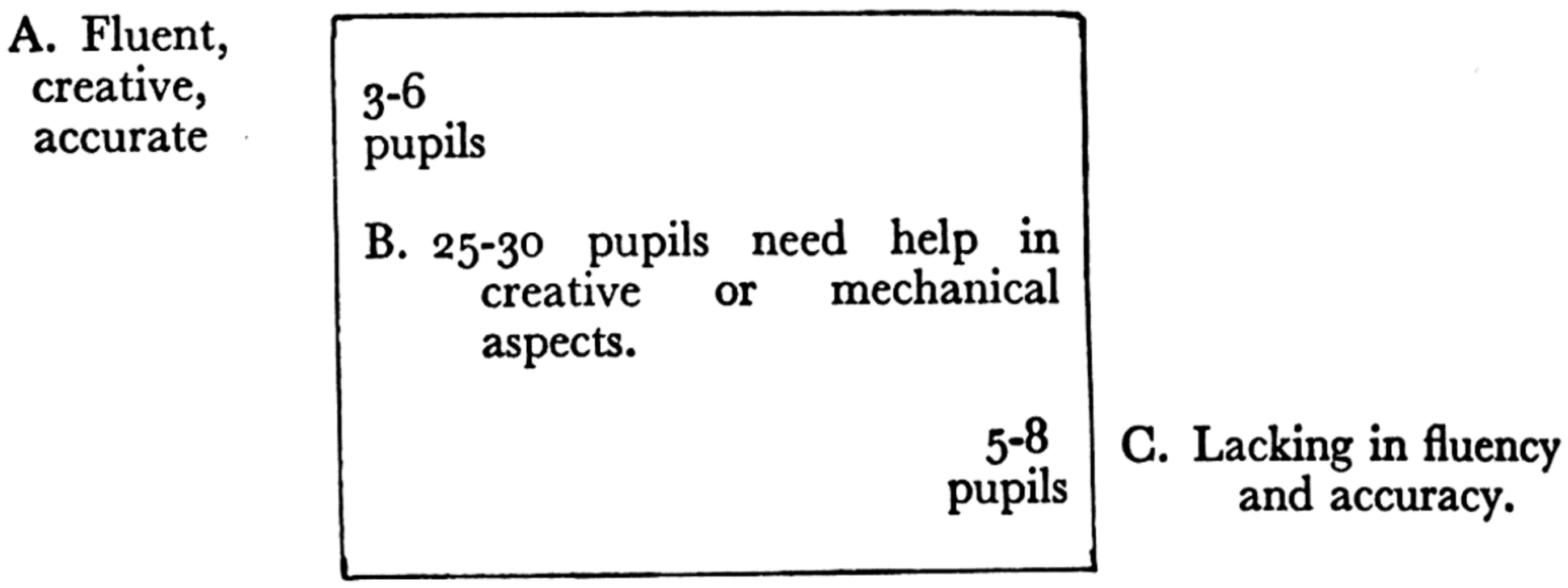


FIG. 12.—Diagram to show Division of Sections in Written English.

Section A.—In Section A are pupils who have developed an excellent power of sentence structure. Their punctuation and grammatical usage is of a high standard and their creative imagination and use of words are well above the level of others in their class. Although these pupils constitute a very small section—sometimes only five and rarely more than eight in number—it is educationally wasteful to submit them to the word studies and various kinds of English exercises required by so many of their colleagues. What these pupils need are plenty of stimulating opportunities for giving expression to their creative literary abilities, for expanding their vocabularies, and for acquiring

Ability as Shown by Intelligence Tests, Tests of Achievement and Teachers' Marks," *Second Yearbook of the Department of Elementary School Principals* (Washington, Department of Elementary School Principals of the National Educational Association, 1923). Edith E. Shepherd, *A Preliminary Experiment in Teaching English Usage*, Supplementary Educational Monographs No. 26 (Department of Education, University of Chicago, 1925). Also C. Warner and W. G. Guiler, " Individual *v.* Group Instruction in Grammatical Usage," *Journal of Educational Psychology*, February 1933.

information. The solution to the problem is group work.[1] These pupils should be helped to plan and develop such activities as writing a brief history of the town or village in which they live, the compilation of a travel book, writing stories or a play, keeping a diary. Thus in the first-named activity one pupil could write on the history of the town, another on its buildings, a third on the occupations of its inhabitants—tasks which would take them out of the classroom and which would demand reading and questioning. In addition to group work, these bright pupils revel in interesting word studies, in attempts at verse writing and in properly directed silent reading.

Section B.—In Section B is the bulk of the class—those who require aid in either the creative or the mechanical aspects of English. The nature and amount of the help they need is one of degree. At the extremes there are two groups of pupils. Firstly, there are those who write quite correctly six or eight lines, but have few ideas, and secondly, those who have plenty of ideas—they often write two or more pages on a topic—but whose sentence structure, punctuation and, to some extent, their grammatical usage are weak. Most of Section B require some assistance in both directions, creative and mechanical. All in the group profit from various aids, such as the use of appropriate models, lessons on sentence joining, practice with selected forms of English exercises, word usage and vocabulary. They all need greater aids to creative expression.

Section C.—Finally, Section C contains a small number of pupils whose ability is so poor that they are not yet familiar with the simple sentence, either spoken or written. For them much oral work and simple sentence construction through pictures, cards and word strips are required, and attempts must be made at correction of the commonest

[1] How often is this done in art and handwork where a few good pupils are allowed to paint a frieze or to produce a communal effort in wood or metal. I can recall many such enterprises—a whole history of ships tableaux painted by four bright 9-year-olds, a cardboard model of Southwark Cathedral constructed by six pupils aged 12 to 13, a lectern made by Central School boys. But how seldom does one see similar results in the equally expressive subject of English.

errors and use of simple punctuation. Although one would not advise that backward pupils should be confined to purely mechanical work—they profit as much, if not more, from creative stimulation—yet it is necessary to achieve a certain measure of efficiency with the simple sentence before writing of a continuous kind can be expected.

The dominant need with this section of backward pupils will be that of providing creative stimulation. Pictures, impelling stories and additional out-of-school experiences, must all be used skilfully to get them to talk and to write.

Developing the Simple Sentence

The written form of the simple sentence must be developed from the oral form, and here its connection with reading is obvious. Simple sentences may be taken from reading books and put on the blackboard, the object being to develop the idea of a simple sentence through the speaking and reading familiar to the child. Then simple sentences may be obtained in response to simple questions, "Where do you live?" "How old are you?" "Have you any sisters?" "When did you go to the pictures last?" "Can you ride a bicycle?"

When the child is able to use the simple sentence fairly well through various forms of *oral* expression he can be guided to the writing of simple sentences. In this work I have found the following steps useful with pupils very backward in English.

Step 1.—Pupil copies simple sentences from blackboard. These have been obtained orally from the class. (Stress initial capital and full stop.)

For backward juniors of 7+ and 8+, whose reading is very weak, there will be need for a number of simple intermediate steps at this stage. English lessons for these children must be mainly reading-writing lessons in which the form of the simple sentence is familiarised through the material read. Thus a series of cards, on each of which is printed

an incomplete sentence illustrated by a picture, may be used to bridge the gap between the child's ability to read and to write simple sentences ; *e.g.*

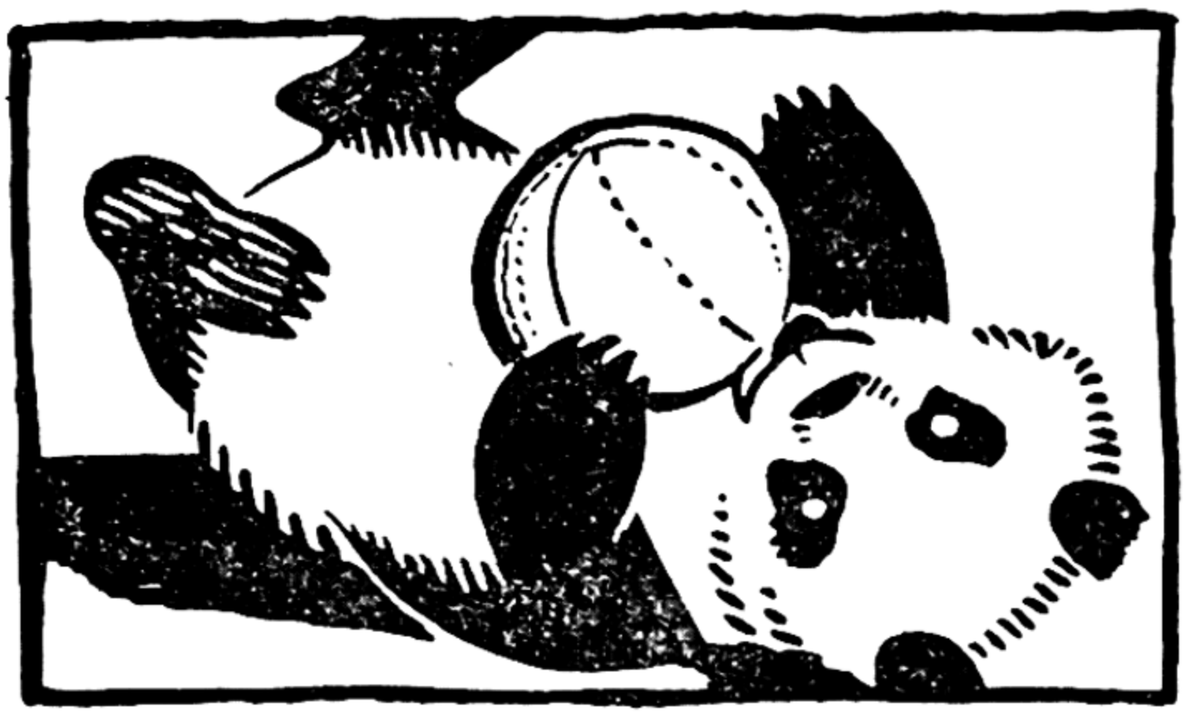
(*a*) We are playing — the sands.
(*b*) Tom is — — from the dog.
(*c*) Horses eat —.
(*d*) This black bird has a — bill.
(*e*) — like milk very much.

} Pictures to illustrate.

The word or words omitted from the sentences are varied from card to card and include adjectives, verbs, nouns and prepositions, while the position of the omissions in the sentences is also varied to help the pupils still further in developing an understanding of simple sentence form.

Step 2.—Pupil copies simple sentences from his reading book after the group has read the sentences aloud. (Stress initial capital and full stop.)

Step 3.—Pupil uses card with picture and words which, when sorted out, give a sentence about the picture. Pupils write the sentence.



is The Baby Panda playing a ball with

Step 4.—Pupil is given a picture on which are words that will completely make up two or three simple sentences.



1. is here new a lifeboat.
2. black and white the is boat.
3. are wearing the men life-belts.

Step 5.—Pupil is given a picture with two questions and along with each question three or four words which will help him to form two simple sentences.



Where is the monkey?
banana tree
What is the monkey doing?
getting bananas

Step 6.—Pupil is given a picture and three or four words which he can use with connecting words to make simple sentences.



elephant, man, trunk, holding

Step 7.—Repetition of Step 5, but with three pictures in sequence each with a question.



Tell what you see (dog, cat, fighting).



Where has the cat gone? (dog, cat, chased, tree).



What is the man doing? (ladder, man, to get).

Step 8.—Three or four pictures are presented, but this time only sets of words for each picture are given. Pupils

have to construct simple sentences with the aid of the key words.



(1) Lion, asleep, forest.
(2) Mouse, ran, tail.



(3) Lion, mouse, caught, paws.
(4) you, what, doing, such, dare, how.



(5) don't, again, roared.
(6) mouse, away, ran.

Step 9.—Pictures are given but only questions asked or statements made. The pupils have to provide the words for the simple sentences.

Step 10.—Pictures only are provided. No words, statements or questions are included. Pupils are required to give a title to the series of pictures and to write simple sentences.

In each of the steps, 1 to 10, pictures have been used, and it might be appropriate at this stage to emphasise the psychological value of pictures in teaching written English to backward children. Pictures provide ideas, stimulate the imagination, aid vocabulary development and form the basis for later visual imagery of a stable kind. Furthermore, pictures enable backward pupils to clarify their thoughts about places, incidents, etc., as points of relative position, relative size, function, pattern, ornament and other detail are visually presented.

Step 11.—Sets of cards are prepared with questions about the pupil's home, school, communal experiences and situations.

Print on top, "Give your answers in short, clear *sentences*."

A. 1. Where do you live?
2. How old are you?
3. Have you any brothers or sisters?

4. Have you a pet ?
5. Do you go to the pictures ?
6. Have you a garden ?
7. Where do you sleep ?
8. What do you have for breakfast ?
9. What do you do on Saturdays ?
10. Who lives next door to you ?

B. 1. Write down the names of some children who live near you.
2. How many babies who live near you are too small to walk ?
3. Which one of your friends has a pet bird ?
4. Which of your neighbours lives in a house painted green ?
5. How many street lights are there in your street ?
6. Do any of your neighbours live in a stone house ?
7. What is the date of your mother's or your father's birthday ?
8. Have you ever moved to a new house ?
9. Which of your neighbours has a tree in the front garden ?
10. Do you grow any roses at home ?

C. 1. What class are you in ?
2. Who is your teacher ?
3. What is the name of your head teacher ?
4. Write the name of a friend in your class.
5. What do you do at playtime ?
6. Do you like milk ?
7. What do you like doing best at school ?
8. What did you paint last week in school ?
9. Where do you do your drill ?
10. Write the name of any story you have read in school.

D. 1. Where do you buy your meat ?
2. Write down the names of two animals in the Zoo.
3. Where can we see a clown ?

4. Write down the names of three things you touch each day.
5. Who delivers your letters ?
6. Where do you post your letters ?
7. Who carts the rubbish away ?
8. Name two things a policeman does ?
9. What can you buy at a florist's ?
10. Who sells bandages ?

E. 1. What would you do if you were outside and it started to rain ?
2. What would you do if you saw a house on fire ?
3. What would you do if you felt cold ?
4. What would you do if you found a purse ?
5. What would you do if your dog were lost ?
6. What would you do if your tooth were aching ?
7. What would you do if you cut your finger ?
8. What would you do if you found a little boy in the street ?
9. What would you do if you found a sick bird ?
10. What would you do if you lost your way in the street ?

Step 12.—Simple pieces of prose are selected and pasted on cards. Underneath the prose are easy questions, which the pupils have to answer in sentences.

E.g. One day Dick and Father were walking along the road. They had been to see a game of football.

" Look, look, Father ! There is a house on fire. Can you see the fire near the chimney ? "

" Yes, we must find a red box," said Father, " and send a call to the fire station." [1]

1. Who were walking along the road ?
2. Where had they been ?
3. What did Dick see ?
4. What did he say to his father ?
5. Where was the fire ?

[1] Taken from *Happy Venture Readers*, Book III, p. 86 (Oliver and Boyd Ltd.).

6. What did father say ?
7. What did he want a red box for ?

This type of work helps the pupil to write simple sentences with the material provided, and also links up reading, English and writing. A development of the last exercise can be used to help pupils to vary the form of their answers to questions and to assimilate different structural forms. For example, pupils may read with the teacher a piece of prose [1] such as the following :

> " A dog was carrying home a piece of meat. *On the way* he had to cross a deep stream. *As he looked down* into the water, he saw what he thought was another dog. This dog was carrying another piece of meat bigger than his own. *Being a greedy fellow*, he dropped his own piece and jumped into the water to get the other dog's piece. *His own piece* sank to the bottom and *the water was so deep* that he could not dive down to it. So he got only a wetting and a mouthful of water. Then he saw that his greediness had cost him his dinner."

The italics indicate the opening words the pupil has to use in his answers to the questions ; *e.g.*

1. What did he have to cross on the way home ?
2. What did he see as he looked down into the water ?
3. Why did he drop his own piece of meat ?
4. How did he try to get the other dog's piece of meat ?
5. Why could he not get his own piece of meat ?
6. What did he get when he jumped into the water ?

Diagrams linked with the actual experiences of the pupils can be used most effectively in the development of sentence building with backward children. Diagrams help such pupils to express their ideas in words, and they are also an

[1] Simple versions of Æsop's Fables are useful for this work. See *New Everyday Classics Third Reader*, pp. 15-48 (Macmillan & Co.).

inestimable aid to pupils in formulating a clear systematic arrangement of the sentences they are seeking to write.[1]

Step 13.—Simple narrative and simple descriptions.

(*a*) Write four sentences about "Our cat" or "Our dog."

(*b*) Write four sentences about "Bombo the elephant."

(*c*) Write five sentences about "Our school."

(*d*) Write three sentences about "An aeroplane."

Most backward children are particularly deficient in knowledge of a general kind. Much of their English therefore needs to be a combination of learning about everyday activities and objects and expressing themselves about these things. As much variety as possible in the form of the sentence work is desirable, and it is important to emphasise the need of commencing each sentence with a capital letter and finishing with a full stop. Their reading books may be used to let them realise the pattern of the simple sentence, the teacher pointing out to them the capital letters and full stops used at the beginning and ends of sentences.[2]

In the children's own efforts with the written form of the simple sentence we must not be too pedantic in the matter of correction. Selective correction for improvement of specific items at particular times is of utmost importance. Remember the pupils' limitations and give credit for their attempts at expression. Base as much work as possible on actual activities. Let pupils do things in front of the class. Give them exercises to perform and then to describe. The child who is limited on the verbal side finds his best basis of expression through seeing and doing.

An interesting variation is to have a short scene acted by pupils or to place a surprise model or scene behind a curtain or blackboard and then to let pupils describe it after having seen it for five minutes.

[1] See *The Use of Diagrams in the Teaching of English* by M. M. Lewis (Ginn & Co.).

[2] Much useful material for developing the mechanics of written English with backward children will be found in *The Pathfinder Books* by J. & P. E. Bradley (Oliver and Boyd Ld.). This series provides a careful integrated reading-writing English course for backward seniors.

Sentence Structure

From the analytic tables at the end of Chapter XVII it is apparent that after the simple sentence, the compound sentence is the next step in the development of written English. Although this sentence form appears in the mental age group of 7 or 8 it is not until the 8 or 9 year level that the compound sentence is used very extensively, and from then onwards it assumes a natural and important place in children's written work. Occasionally it is advisable to give exercises to promote the use of "but." These might take the form : "What is the difference between an eagle and a sparrow?"

Specimen : An eagle is big *but* a sparrow is small.

What is the difference between a cat and a dog; an elephant's trunk and a monkey's tail?

Sometimes it is necessary to check a too extensive use of "and," a point referred to in a later section.

The complex sentence, on the other hand, does not show the same rapid rate of growth as the compound, and we require to help pupils considerably with complex sentence forms if adequate development is to proceed. Analyses of children's written work shows that the extent of usage of different types of clauses in complex sentences, in decreasing order of usage, is as follows :

(*a*) clauses of time and place ;
(*b*) relative clauses ;
(*c*) clauses of reason ;
(*d*) clauses of condition.

Extent of use is, however, not necessarily the same as order or appearance. Thus, although clauses of condition are last on the list yet we find not a few 7-year-olds using the conjunction "if." In helping pupils with sentence-joining it seems sensible to follow the approximate order of appearance of the conjunctions in children's written English. From my own records the list below appears to be the approximate order of appearance. Obviously, it is not

possible to list each conjunction in any reliable individual time order—both oral and written achievements in English being so sensitive to home environment—but an order in groups of five conjunctions commencing with a 7-year-old mental level is feasible.

List of Conjunctions in Approximate Order of Appearance in Children's Written Work

and, but, as, if, so ;
then, while, because, who, after ;
when, that, where, before, which ;
than, yet, although, until, whenever ;
thus, since, unless, however, till, for ;
nor, or, nevertheless, whether, therefore.

Simple exercises on sentence-joining can be based on these conjunctions. These exercises might be of this type :

Type A. Begin each sentence with either

"If I were a fairy".....
or "If I were a giant".....
(i) ..... I could play with the rabbits.
(ii) ..... I could hide under a mushroom.
(iii) ..... I could look over the house tops.
(iv) ..... I could lift a motor car.

Type B. (i) I shall come if .....
(ii) The corn is ripe so .....

Type C. (i) The rope will break ..... you tie any more bags on the end of it.
(ii) The concert was over ..... we went home.

Type D. Joining sentences :
(i) The boat will be wrecked.
(ii) The storm does not stop.

(i) The sun is warm.
(ii) The flowers are coming out.

Similar exercises can be constructed for other conjunctions.

Model sentences showing the varied uses of different conjunctions are useful to backward children, particularly if the sentences are framed about familiar activities.

The reproductive composition, provided the ideas are simple, is a direct aid in developing the simple sentence. Read the story or description several times, so that pupils have the opportunity of assimilating some sentences in their original forms. Pupils may also derive help from a carefully planned programme of sentence-joining.

Developing Sequence of Ideas

With all pupils, but especially with backward ones, the problem of helping them to set down their ideas in written English in some sort of logical sequence is a difficult one. An examination of the characteristics of different types of composition from children aged 7 to 14, as set out in Chapter XVII, clearly shows that at the lower mental levels, lack of sequence and continuity are fairly universal. With growth in general intelligence there is a natural increase in the degree of sequence and continuity shown in pupil's written work, but with backward scholars the improvement is slower. They are slower to appreciate the relationships involved in logical setting out of ideas, and in continuity and balance, and they require considerable practice to bring these aspects of their written English to an acceptable level. Suggestions for exercises useful for improving sequence and clarity of development are given in the following paragraphs.

Exercise 1.—Small pictures of the "comic paper" strip type, increasing in number from three to six pictures, provide a concrete basis for assisting pupils with correct sequence of ideas. This can be varied by jumbled pictures that pupils have to arrange in order, after which they write a sentence about each (see top of page 461).



Exercise 2.—Pupils carry out simple activities individually, or certain actions or experiments are demonstrated in front of the class. To begin with, a simple exercise containing three essentials is used ; for example, finding a duster, cleaning the blackboard, and writing a word on the board. Pupils are asked to describe what was done, thus :

"Jack Jeffries took the duster and cleaned the blackboard. Then he wrote a word on the board."

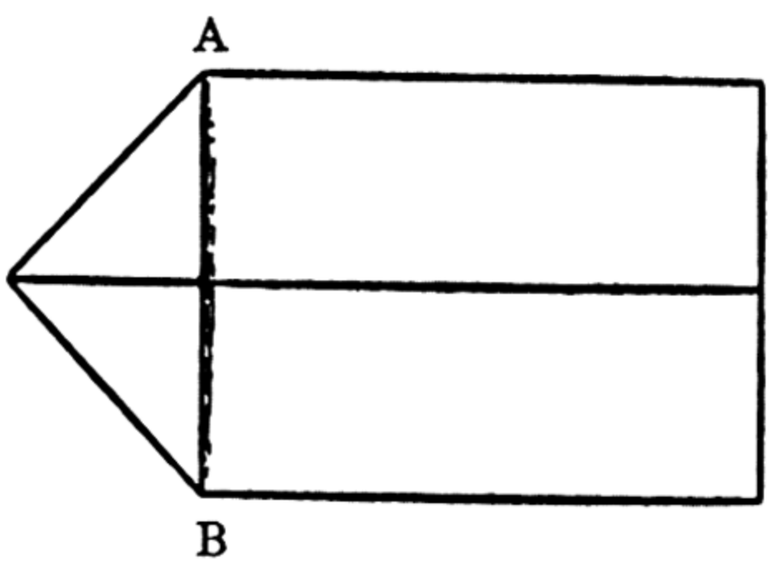
Groups of useful joining words and opening phrases, such as "next," "after which," "while," "before," "at the beginning," "during this time," "while waiting," "at the end," can be given for guidance. Later on, activities involving five or six essentials may be employed.

Supplementary to this, training may be given in reading a sequence of seven or eight simply worded directions or descriptions of events, which forms the basis for a corresponding set of actions, each successively contributing to a final issue. For example, a selection such as the following produces some realisation of the need for a logical, carefully considered sequence of statements.

Making Paper Darts

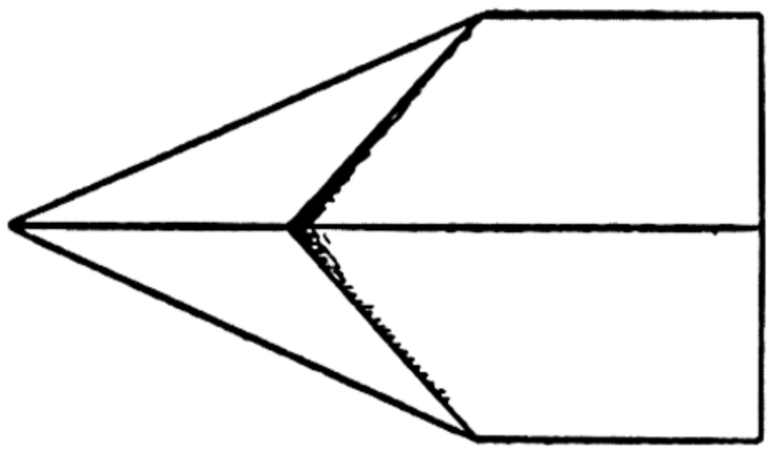
"Get a fairly stiff sheet of paper, a little longer one way than the other. A sheet of paper from an old exercise book will do nicely. Fold this paper five times. Be careful that all your folds are even and neat or else your dart will not fly straight. Fold the paper a first

time so that the two long edges come together and then open it out. This will leave a straight crease right down the middle of the sheet. Now take one corner of the paper and turn it over until it touches the crease ; fold it down in that position. Do the same with the other corner at the same end of the paper.



That is the second fold finished. Your paper should look like this now.

Now for the third fold :



Take the two corners marked A and B in the sketch and turn them in till they touch the middle crease ; fold them down there, so.

Fourthly, fold the paper back along the middle crease that you made first of all. There is now only one thing left to do. That is to take each side of the folded paper and turn about half of it outwards, so as to form a pair of wings for your dart, like this.



If at first you make the wings too wide or too narrow, just try again until you find the best size for flying.[1] "

This can lead on to descriptions of such everyday activities as putting in a new fuse wire or fixing a new washer to a tap—activities which can be demonstrated to all and which are a useful preparation for life.

Exercise 3.—Arranging sentences in order.

Allow pupils to rearrange, in correct order, a group of sentences which reveal an obvious lack of sequence. This

[1] Adapted from pp. 31-33, Book II, *Reading and Composition*, R. MacIntyre (Macmillan & Co.).

is one method of impressing on them the relationship between sequence and continuous meaning. Here are three examples of increasing difficulty [1]; *e.g.*

(*a*) They threw sand at us.
We had a holiday.
We saw the monkeys in their cages.
We went to the Zoo.

(*b*) Put these sentences in their right order. Use joining words to make better sentences.
The ambulance arrived.
He broke his leg.
The man slipped on a banana skin.
He was taken to hospital.

(*c*) Robinson Crusoe.
I got on board.
In the tent I put the things I had saved from the ship.
I prepared a raft on which I brought away several things from the ship.
Having got my cargo ashore I made a little tent.

Such exercises have obvious limitations, and the major value in their occasional use may well be that of adding a little of the puzzle atmosphere to otherwise uninspiring English exercises.

Exercise 4.—The reproduction of a story or extract in the pupils' own words is perhaps the most effective method of developing sequence, provided two points are kept in mind: (*a*) the need for careful selection and grading of stories or extracts; (*b*) the value of properly planned assistance in the early stages. Help may be given by suggesting the points to be selected from the story and the number of sentences to be written about them.

1. Baby kangaroos are soft and furry. They are brownish in colour. They have long ears and tiny front feet.
What is the baby kangaroo like? (2 sentences.)

[1] For graded exercises of this type, see *An Introduction to the King's English*, Nisbet, Books I, II, III.

2. The baby kangaroo lives in a furry pocket in his mother's fur. When he is in this pouch you can see only his head. He lives in the pouch for many months.

   Where does he live? (2 sentences.)

3. After some time the baby kangaroo hops out of his mother's pouch. He then begins to nibble green grass. The mother and father kangaroos go out in the early morning to find the green grass in the fields.

   What does he eat and where does he find his food? (2 sentences.)

Exercise 5.—The preparation stage before a composition is written may be made an interesting medium for the development of sequence. Subjects which lend themselves especially to logical development should be taken occasionally to help pupils in planning for clarity, continuity and coherence. For example, most pupils, whether junior or senior, enjoy writing about pirates, pirate ships and hidden treasure. A description of a pirate ship followed by an action on the part of the pirates (perhaps suggested by readings from *Treasure Island* or *The Last of the Incas*) provides an excellent basis for indirect teaching of sequence. During one such preparation lesson a group of "C" boys in a senior school made, with enthusiasm, the following spontaneous suggestions about the description of a pirate ship and its voyage. The topics were jumbled up in this way :

The captain.
The crew.
The "Jolly Roger."
The size of the ship.
Her guns.
Treasure.
Swords, knives.
Sails, flag.
Number of crew.
Ships sunk or taken.
Small boats.
Burying the treasure on an island.
Where the crew came from.
How the crew were dressed.
How the crew were armed.
Prisoners on board.
Slaves.

Where boat was going. Plank, bunks, chains,
Fights with other ships. anchor, telescope.

When all suggestions regarding points to be included in the description had been received, it was realised by most of the class that some classification and order must be introduced into the material before any sensible description could proceed. Groupings for three different paragraphs were given by the class, and the items for each heading were underlined in coloured chalk and arranged in the most logical order within the particular group, thus :

A. Particulars of the ship and details of the captain and his crew.
B. Details of their encounters, amount of treasure, prisoners.
C. The voyage to the island, the burying of the treasure, return to England.

A joint effort of this kind with plenty of co-operation, and opportunity for individual expression, is interesting to the class and of great value in aiding logical development of ideas. Here, again, the informational and pictorial aspects of the preparation should be given adequate consideration.

Exercise 6.—Selected models which illustrate sequence are also of inestimable value. The method of development, the position of different elements, the particular use of joining words can all be revealed in a careful study of appropriate models.

Mechanics of Written English

(a) *Grammatical Usage*

Reference has already been made to the desirability of keeping the correct balance between the creative and the mechanical aspects of written composition. The need for providing ample opportunity for expression unfettered by an over-insistence on mechanical correctness has also been stressed. A too intense drive on the mechanical side often defeats its own ends, for creative powers are stultified and

pupils often make, in written work, the very errors that they have been so frequently drilled to avoid. On the other hand, there is little doubt that pupils, particularly those whose home verbal background is poor, require some aid on the mechanical side. They must be told the right forms and given a chance to avoid the wrong, otherwise early errors tend to be perpetuated. The main objective should be to assist pupils with correct grammatical usage through teaching methods scientifically planned, but at the same time interesting and to some extent indirect. Expression and correctness should be developed side by side, the one helping the other. The planning should be based on the principle that the more frequently a construction is used, the more important is it to make the form habitual and that corrective teaching should deal with forms in which errors are most commonly made. Dialectal differences should be disregarded and the aim should be habit formation, not knowledge of correct forms. So much of the old analytic kind of formal grammar gave an artificial knowledge of correct forms, but no real practice in applying them. The formation of correct language habits is only established where the pupil is made aware of the correct form through interesting language activities, and where he is given the opportunity of realising that "he ain't" isn't the usual form. "The English teacher has two problems: to create an attitude and atmosphere of willingness to accept standards of expression which society, in general, deems 'correct' and to provide opportunity for the practice of these forms until they become agreeable, natural and habitual." [1] Pupils should be aware of both correct and incorrect forms. They should receive brief frequent drills on important constructions, and correction should be limited to one or two forms at a time. Experiments [2] reveal general agreement as to the commonest

[1] *An Experience Curriculum in English*, p. 243, National Council of Teachers of English, English Monograph No. 4, 1935 (D. Appleton Century Company).

[2] A. Diebel and I. Sears, "A Study of the Common Mistakes in Pupils' Written English," *Elementary School Journal*, XVIII, pp. 172-185. R. L. Lyman, *Summary of Investigations Relating to Grammar, Language and Composition*, Supple-

types of usage error in written compositions. They are, in order of frequency :

1. Failure of verb to agree with its subject in number and person.
2. Wrong form of noun or pronoun.
3. Confusion of past and present tenses.
4. Syntactical redundancy.
5. Confusion of past tense and past participle.
6. Use of wrong verbs.
7. Wrong use of prepositions.
8. Confusion of adjective and adverb.

All experiments on analysis of errors show that the same types of errors tend to assume the same order of relative importance at different age levels, but that errors in grammatical usage are more easily remedied than errors in sentence structure. This is probably due to the higher correlation between general intelligence and ability in sentence structure than between intelligence and grammatical usage.[1]

In compiling sentence work for really backward pupils the teacher might be guided by the following examples of approximate teaching order of common usage for the purpose of eliminating common errors.

A. *Work with Verb Forms*

Correct form to be practised	*Common error*
1. *I saw* him in town.	I seen him in town.
2. *I did* my work.	I done my work.
3. *He ran* down the street.	He run down the street.

mentary Educational Monograph No. 36, 1929 (University of Chicago Press). J. C. Seegers, "Improvement in Language Work," *Elementary School Journal*, XXIV, pp. 191-196, 1923. M. J. Stormzand and M. V. O'Shea, *How Much English Grammar*, p. 224 (Warwick and York, 1924).

[1] Actual correlations obtained by F. Eleanor Schonell from the test results of 119 twelve-year-old boys were : general intelligence and sentence structure $r = \cdot 62$, general intelligence and grammatical usage $r = \cdot 53$. See *An Experimental Study of Diagnostic Tests in English*, M.A. thesis in the University of London Library, 1941.

A. *Work with Verb Forms*—continued

Correct form to be practised	*Common error*
4. *Tom came* home early.	Tom come home early.
5. *He gave* me fourpence.	He give me fourpence.
6. *He rang* the bell.	He rung the bell.
7. The *teacher asked* me for my work.	The teacher ask me for my work.
8. *I have done* my lessons.	I have did my lessons.
9. *He has gone* for the doctor.	He has went for the doctor.
10. My *sister has taken* the dog with her.	My sister has took the dog with her.
11. The sailor *has seen* the light.	The sailor has saw the light.
12. *She drank* her milk.	She drunk her milk.
13. *He threw* the ball.	He throwed the ball.
14. *She teaches* us to swim.	She learns us to swim.
15. *He isn't* in the room.	He ain't in the room.
16. *He knew* how to open it.	He knowed how to open it.
17. *He brought* the horse along the road.	He bring the horse along the road.
18. It *became dark* quite early.	It become dark quite early
19. *He does* his job well.	He do his job well.
20. *Tom was given* a shilling.	Tom was give a shilling.
21. *Mary has eaten* her lunch.	Mary has ate her lunch.
22. *We have known* him for a year.	We have knew him for a year.
23. *They have brought* the oranges.	They have bring the oranges.
24. *The burglars have taken* the jewels.	The burglars have took the jewels.
25. *He sat* next to me.	He sit next to me.
26. *The soldier wrote* us a letter.	The soldier writ us a letter.
27. *He sang* a song.	He sung a song.
28. Will *you lie* down?	Will you lay down?
29. The master *has spoken* to us.	The master has spoke to us
30. The water *has frozen*.	The water has froze.

B. *Agreement of Verb with Subject*

We *were* in town.	We was in town.
Weren't they at the concert?	Wasn't they at the concert?
They *were* at home.	They was at home.
You *were* last.	You was last.
Weren't you absent?	Wasn't you absent?
There *are* six birds on the beach.	There is six birds on the beach.
I *haven't* any money.	I hasn't any money.
Tom and Bill *are* going away.	Tom and Bill is going away.
He *doesn't* like custard.	He don't like custard.
Peter and his brother *have* to go home.	Peter and his brother has to go home.
Some of the pigs *were* lost.	Some of the pigs was lost.
One of the men *was* saved.	One of the men were saved.

Pronouns

He hurt *himself*.	He hurt hisself.
They found *themselves* on dry land.	They found theirselves on dry land.
He and *I* broke the window.	Him and me broke the window.
Those houses are for sale.	Them houses are for sale.
You and *I* must go now.	You and me must go now.

Various forms of interesting exercises can be devised to produce accuracy in these fundamentals of written English.

Diagnostic English Tests

It is useful to discover the types of errors most frequently made by a class and then to set aside some time in the week for the elimination of these errors by drills specifically constructed for the purpose. In order to plan this remedial work systematically for *senior pupils*, diagnostic English tests are invaluable. These will provide not only estimates of development in grammatical usage, but also of punctua-

tion, use of capital letters and of sentence structure. Thus one series of graded diagnostic English tests provides for an exact qualitative and quantative estimate of the pupil's deficiencies in English usage, punctuation and capital letters, vocabulary and sentence structure.[1]

Test 1 (*English Usage Test*) consists of 54 examples of everyday usage graded according to difficulty and covering all the commonest forms of grammatical inaccuracy. Thus :

1. Did you see Mary ? No, I have not s . . . her today.
15. The teacher r . . . the bell five minutes early yesterday.
32. I haven't anything / nothing left in my basket.

The results of the test provide striking diagnosis of the types of error to which each pupil is prone.

Test 2 (*Punctuation and Capitals Test*) consists of 36 sentences containing examples of punctuation and the use of capital letters. Four examples of most forms are given, and the forms are introduced in order of everyday use and difficulty—thus the first examples deal with the use of the full stop and the capital letter at the beginning of the sentence. Examples from the test are as follows :

1. the birds sing in the trees
13. I wish Alice would come said mrs Jones
24. If its hot we shall take Doras swimming suit

Test 3 (*Vocabulary Test*) consists of 60 examples of the meanings of words carefully selected from common nouns, verbs, adjectives and adverbs. The test words are graded in difficulty and are framed in a natural type of exercise.

[1] *The Schonell Diagnostic English Tests*, for pupils 9+ to 16 years and for backward seniors of 11+ to 19 years, by F. Eleanor Schonell (Oliver & Boyd Ltd., 1940). Details for adminstration, scoring and interpreting the test results are given in *The Handbook of Instructions* (Oliver & Boyd Ltd.).

E.g. 3. To EXCUSE is: to be late, to cry, to go fast, to pardon.

24. A RUDDER is part of: a sledge, a boat, a shop, a bus.

47. MEEK means: humble, delicate, bold, weak.

Test 4 (*Sentence Structure Test*).—This test reveals the pupil's level of sentence construction and his use of sentence linkings. The material consists of groups of two, three or four simple sentences which the testees have to join in one complete sentence. By this means both accuracy and variety of sentence structure are measured. In all, seven groups of simple sentences are employed in the test, commencing with two groups each of two simple sentences, then three groups of three simple sentences and finally two groups of four simple sentences. Opportunities are provided for all forms of sentence linking—the use of various connectives, of participial phrases for opening sentences, of appositional phrases, and of adverbial and adjectival phrases in place of sentences.

The joined sentences are scored according to a carefully considered marking schedule in which sentence joinings of differing merit may gain from one to seven marks. The results accurately reveal the exact deficiencies of each pupil.

All the tests are preceded by sufficient examples which are worked through with the testees to acquaint them thoroughly with the requirements of each test.

CHAPTER XIX

BACKWARDNESS IN COMPOSITION AND ITS RELATION TO MATERIALS AND METHODS

Part II

The Use of Models.—One of the most useful approaches to the teaching of technique and form is through the use of models, but they must be correctly selected for the appropriate level of English ability and must be skilfully analysed if maximum value is to result. Both for specifically backward pupils at all levels and for dull scholars the use of models often produces better results than those derived from English exercises. The first essential in the use of models is that they should be short, simple and direct. The model must be superior to the pupils' own efforts, but it must not be so superior as to render it useless for their imitation. It must not be so long as to render the exercise tedious, or so involved in its words and forms as to render it meaningless. Many models selected for use with children fail in these essentials. Usually, the model contains so many elements different from the pupils' English that the children fail to see whither they are going. They are confused by all the excellencies which mark the model and lack of which mar their own work. An additional weakness is that in some instances models are used too early. Models should not be employed until pupils have had plenty of practice in writing simple sentences and have achieved some proficiency in joining sentences. Where models are used too early the results are disappointing for both pupil and teacher. Models cannot be substituted for the work in sentence development outlined in the last chapter, nor can they altogether take the place of very necessary drills in English usage, but after a certain level has been reached the copying of models, which are direct and complete, is one way of fusing in a continuous form much of the earlier

work. Furthermore, attractive models give a new fillip to the work in English.

To ensure that the form of English is suited to the child's mind, and that it does not contain adult patterns which we cannot expect from backward pupils, it is useful to select models from the written work of pupils two or three mental years ahead of the class under consideration. Obvious errors in spelling, punctuation or structure can be corrected. These pupil models form an excellent supplement to those derived from other sources. They can be used to improve descriptive, imaginative and explanatory writing, provided a helpful examination of them is made with the pupils.

Here, for example, are two simple models. *A* is a descriptive form, which naturally lends itself to similar exercises by the pupils. *B* is a pupil model which can be used as a basis for other compositions on topical events.

Model A

My Pal Nip

Everyone in our street knows my pal Nip. He is a big black dog with a shaggy coat and a long tail. He is quite black except for a small white patch on top of his head. He has twinkling eyes and two rows of shining white teeth. When I take him for a walk he barks with excitement.

Do you know that I have had Nip since he was a tiny puppy? No one would think now that he was once no bigger than my shoe.

I feed Nip each day with dog biscuits, while once a week he has some meat and a bone. If the weather is cold Nip sleeps in the kitchen, but during the summer he remains outside in his kennel.

Nip is a good dog, because he guards our house well. He is very fond of company and he is always ready to welcome me on my return from school.

Analysis.—Point out the interesting opening to the composition. "The first paragraph deals with a description of the dog. Good words are used: 'shaggy,' 'twinkling,' 'shining.' Occasionally it is interesting to ask a question in our compositions. Try to use as many different joining words as possible. In this composition, 'when,' 'that,' 'than,' 'if,' 'because,' 'while,' have been used. Try to finish each composition with a suitable sentence. This one says that Nip is always ready to welcome his master on his return from school."

Exercise.—Write ten lines on "My Cat," "My Rabbit," "My Canary," or "My Pet." Try to write like the model.

Model B

A Snowy Day

When I woke up one morning in January it was very dull and the sky looked very grey. There was a keen north wind blowing. Before long I could see snow-flakes falling and covering the ground with a lovely white carpet. Soon all the hedges and trees looked as if they had put on a white coat while the people walking down the street looked like snow-men. The poor little birds did not know where to hide while snow-flakes came dancing down; and when I looked out of the door they had made a pattern on the snow where they had hopped backwards and forwards to the porch for crumbs. The children had grand fun snow-balling and sledging while still the snow kept falling until everywhere seemed to be wrapped in a white blanket.

Naturally, models are to be used only for the development of technique and style. The actual content or ideas of the written expression should come from other sources. For pupils who are weak in such aspects of English as

variety and balance of sentences and the use of appropriate words and phrases, well-selected models function most naturally and effectively.

Short Compositions

It should be remembered in work with pupils backward in English that the short composition of six or seven lines produces better results in the improvement of written English than attempts at longer compositions. With one group of pupils backward in English I used a period of fifteen minutes every morning in which they wrote five, six or seven lines on some activity during the preceding twenty-four hours. Correction of these with different pupils, at odd times during the week, produced more rapid improvement than that achieved in the set English lessons.

It is obvious that some composition work should be preceded by preparation. Success in this may be obtained by warning the pupils at the beginning of the week of the subjects to be taken for longer compositions at the end of the week. Pupils may be provided with small notebooks in which to enter points concerning the next composition. Thus several compositions such as, " When my Father was a boy," " The Milkman and his work," " The Bus Driver and his work," " Advertisements," " How I help at home," reveal evidence of the value of preparation, provided the work is related to the pupils' everyday lives.

Letter Writing.—For pupils backward on the verbal side, letter writing provides one of the activities most conducive to fuller self-expression. The barriers that prevent fluency in writing about even familiar subjects are to a great extent surmounted when the first person singular is introduced into the verbal exercise. The magic word " I " seems to dispel inhibitions that operate in other written work. This cathartic influence of personal pronouns is probably due to several reasons, of which the most apparent is the fact that writing in the first person is easier than expression in other grammatical forms. But I also feel that there are accompanying psychological influences which make letter

writing such a suitable method of expression for backward pupils. These psychological influences are the intimacy that is aroused by the use of " I " or " We," the clearer visual imagery which is stimulated, the appeal to the natural egotism of the writer, and above all the feeling that the activity is worth while. The letter is being written to someone about some specific piece of news. In other words, the letter has, what so many composition exercises lack, an audience situation. The letter is conveying information to someone else.

With these points in mind it is obvious that for backward children letter writing periods should be made as real as school conditions will permit. The letter writing should be centred around topics of interest—around real experiences of the children. It is not very difficult for the ingenious teacher to create needs for letter writing. One interesting way is to let the letter writing be the natural outcome of an activity study of " Messages," or " Sending our Thoughts to Others," in which the various forms of sending messages, in modern and in olden times, is studied through stories. Another approach is through a simple study of the postal system, with visits and actuality [1] work included. The children can be encouraged to discover the essentials of letter forms for themselves, after which a class lesson may be taken to discuss the address, salutation and ending of a friendly letter. Care should be taken to allow the pupils to provide the information themselves. Most of the necessary knowledge of punctuation and capitalisation can thus be treated in a natural setting.

The commoner forms of punctuation—the full stop, the comma and the question mark—can be considered in their various usages, while many of the usual uses of capital letters can be naturally taken in letter writing and in addressing of envelopes. The copying of a model letter form, with correct punctuation, may precede the writing of a letter by the pupils to their mother or father telling them about something of interest at school. During practice

[1] See pp. 426-27 for reference to an actuality study.

in letter writing, one or two forms of punctuation or capitalisation should be taken at a time. To supplement with practice on cyclostyled sheets[1] and to proceed slowly are the golden rules. We should aim at following an order of difficulty of teaching punctuation marks and capital letters such as that given in the schedule below.

Schedule N

Approximate Order for teaching Punctuation Marks and Capital Letters

Punctuation

Full stop at the end of a sentence.
Comma after " Dear Father."
Comma after " Yours sincerely."
Question mark at the end of a question.
Comma after a series.
Full stop after Mr., Mrs.
Full stop after initials.
Comma after street number,
street 31, Hay St.,
and Paddington,
town London.
Quotation marks for direct speech.
Comma to classify sentence developments.
Comma after phrase in apposition : Mr. Smith, our teacher.
Apostrophe in I'll, it's, hasn't, didn't, I've, I'm, isn't, can't, don't, that's, couldn't, you'll, aren't.

Capitals

Own name.
Beginning of a sentence.
Capital I.
Name of street.

[1] Wherever possible practice in punctuation and capital letters should have a functional basis, that is it should be closely associated with the reading and writing interests of the children. Select for this purpose very short simple paragraphs of a few lines from letters, reading books or everyday material.

Capitals—continued

Name of town.
The date.
Names of persons and places used in letters.
Name of school.
Name of days of week.
Name of months of year.
Mr., Mrs., Miss.
Local geographical names.
Names of any organisation, the Boy Scouts, Girl Guides.
Use in direct speech.

At an appropriate stage in the letter-writing programme it is worth while allowing the pupils to write and address a letter which they actually post. This adds great interest to the lesson. In one class where this was done, the pupils provided their own stamps, and the people selected to receive the letters were those from whom a reply could be expected by the following week. A little judicious management was required in this aspect of the work—in some cases it meant a prior note to relatives or parents or members of the staff. Envelope making can be profitably introduced into the work and practice in envelope addressing, on sheets of paper cut to the appropriate size, provides exercises in the use of capital letters. The letter-writing interest can be sustained by varying somewhat the form of the letter and the purpose for which it is written.[1] A letter box, into which are posted some of the best letters written by the pupils, sustains interest, while the visit of a postman to tell of his work also adds meaning to the study.

Marking.—In marking the written compositions of pupils backward in English, three considerations should influence us. Firstly, in order to maintain the pupil's self-confidence, it is essential to give a fair appraisal of his work in the light of his intellectual powers and his home environment. Secondly, the marking should not only be

[1] The teacher will find useful suggestions in some American text-books, *Daily Life Language Series*, Lyman, Johnson, Bear (Ginn & Co.).

assessive, but diagnostic as well. Marking which merely reveals a host of inaccuracies without being positive and constructive is of little use to the backward scholar. Thirdly, the compositions should be marked so that a fair balance is maintained between the creative elements and the mechanical elements of written work. The content or thought aspects of compositions should receive correct appraisal, even if the structural and mechanical aspects are weak. Composition is an expressional activity, not merely a verbal exercise, and by placing a disproportionate value on mechanical aspects it is easy to inhibit a pupil's creative powers. Spelling, punctuation, grammar and correctness should assume less emphasis than content in the total assessment of the composition. How can these three important elements in marking be safeguarded?

The usual method of composition marking is by general impression. The teacher reads the compositions and allots marks according to his idea of whether they are "good compositions" or "bad compositions." Most markers have in mind some points relating to the merits and weaknesses of English prose while they are marking, and these guide them to their final judgment. Research has, however, shown that the marking of different markers may show quite considerable disagreement, and that even the marking of one person may show appreciable variability from time to time with similar material.[1] It is not within the scope of the present study to consider all the factors involved in the inconsistency of markers or in individual variability, nor would it be profitable except in so far as it yielded aid in the marking of compositions of pupils backward in written English. In general, the disagreement between markers of compositions or essays, using the method of general impression, can be summed up in the

[1] Those who wish to pursue this aspect further can consult three books based on first-hand studies of the problem. These are Professor Valentine's book, *The Reliability of Examinations* (University of London Press), and publications of the International Institute Examinations Enquiry Committee, *An Examination of Examinations* and *The Marks of Examiners* (with a memorandum by C. Burt), P. Hartog and E. C. Rhodes (Macmillan).

statement that different examiners allot, consciously or unconsciously, a different proportion of marks to the creative and mechanical aspects of written English. Some emphasise creative or thought elements at the expense of the mechanical, others give them about equal value, while some allow grammar, punctuation, spelling and structure to assume the more important rôle in marking. Attempts have been made to overcome this variation by stating the points to be noted in marking the essays. Thus Wallis,[1] in his work as Chief Examiner for the London County Council, advised examiners of the essay to look for seven positive aspects, namely, vocabulary, accuracy, quality of phrases, consistency, quantity of ideas, quality of ideas, and completeness. In addition, examiners were presented with specimens of essays that could be allotted, approximately, 90-100 per cent., 70 per cent., 50 per cent. and 40 per cent. of the marks.[2]

In America, considerable use has been made of composition scales. These arose from the need to obtain a more objective measure of composition achievement for purposes of comparing pupils in different classes, different schools, and even different towns and states. The earliest scale was that of Hillegas,[3] who prepared ten samples of composition as determined by five hundred judges. The judges arrived at their decision by general impression and apparently there was no agreed analytic schedule for their guidance. This latter point, together with the fact that the ten compositions in the scale were all on different topics, reduced the value of the scale as a measuring instrument for teachers. Thorndike [4] and Trabue [5] made revisions of the Hillegas scale, but their revised scales also failed to differentiate between the thought and the mechanics of the compositions.

[1] B. C. Wallis, *Technique of Examining Children* (Methuen & Co.).
[2] Specimens kindly communicated to me by the late Dr W. Rees, Lecturer in English, Goldsmiths' College, University of London.
[3] M. B. Hillegas, *Teachers' College Record*, XIII, 1912.
[4] E. L. Thorndike, *Teachers' College*, Columbia, New York, 1915.
[5] M. R. Trabue, *Teachers' College Record*, XVIII, 1917.

Practically all scales of early workers failed to make provision for different kinds of composition. Letter writing, narrative, reproductive, imaginative and expository forms of written English were considered at one and the same time.

These early scales were followed by others from Courtis, Willing, Van Wagenen, Leonard, Hudelson, and Lewis.[1]

British educationists have long recognised the need of objective measurements in written English. In *Mental and Scholastic Tests*,[2] Burt considers the problem of measurement in composition in terms of quantity and quality. Quantity is measured by the number of words written in thirty minutes while qualitative excellence is measured by the method of samples. In discussing the value of a median sample, Burt says, "The common method of marking compositions—to ignore positive excellences, to note only definite faults, to count the number of such faults and to subtract that number from an arbitrary maximum—is, from a scientific standpoint, almost worthless," and one might add that from a teaching standpoint such a practice is not only worthless but harmful.

Burt gives median samples for the composition, "School," for age groups $7\frac{1}{2}$ to $14\frac{1}{2}$ years. These median samples of a narrative form of composition have been of great value to teachers and psychologists alike.

Boyd [3] rendered a service to markers of compositions by showing the value of communal expert opinion in selecting essays which might rightly be regarded as standards for a composition scale. The twenty-six essays selected were placed in order of merit and analytic points concerning them were appended.

A recent attempt to formulate a composition scale for English children is that of G. Perrie Williams,[4] who obtained

[1] For a consideration of the scales by these workers, see *Summary of Investigations Relating to Grammar, Language and Composition* (pp. 141-153), R. L. Lyman (University of Chicago, 1929).

[2] *Mental and Scholastic Tests* (third impression), pp. 330-332, 1927.

[3] W. Boyd, *Measuring Devices in Composition, Spelling and Arithmetic* (Harrap & Co.).

[4] *The Northamptonshire Composition Scale*, G. Perrie Williams (Harrap, 1933).

from one hundred and eighty-six teachers, opinions concerning the apportioning of marks between the three aspects of the compositions. Most teachers thought that there should be equal marks given to thought and structure, but there were nineteen teachers who wished to give higher marks to structure than thought and nine who wished to evaluate mechanics higher than structure. The scales finally evolved are the best and most efficient so far available to English teachers.

Composition marking, along somewhat different lines, has been discussed by Steel and Talman.[1] They do not believe that we can reliably assess ideas—" their orderliness, imagination, humour, or wit they display "—and at the same time measure the form of expression. They conclude that " the marker of compositions will mark all he need mark if he valuates expression, that is, if he assesses the efficiency of the expression to communicate ideas which shape it." [2] They therefore advocate neglecting the thought, or ideas, or content aspect of compositions and concentrating on three points.

A. Vocabulary (words and ideas).
B. Sentence structure.
C. Sentence linkings.

Their method is to award credits for excellences in A, B or C, that define with greater precision, produce clarity or emphasis, or improve the pattern of the writing. Forms which are merely correct without adding anything to the composition do not receive a mark, while incorrect uses in any of the three aspects receive a penalty. The method of marking, together with five points to note in sentence structure and eight points to note in sentence linkings, is outlined in detail.

Consistency is claimed as an outstanding merit for the method ; this may be so, but whatever its value for normal

[1] *The Marking of English Compositions*, J. H. Steel and J. Talman (Nisbet & Co., 1936).
[2] P. 3. Steel and Talman.

children it is certainly worthless as a means of marking for pupils backward in English. Here the lack of credits and the presence of penalties runs counter to the very objective we wish to attain, namely, the encouragement of expression at all costs and the maintenance of self-confidence.

Finally, reference might be made to an investigation by Cast,[1] who compared four different ways of marking compositions. Her conclusion is based on the statistical analysis of the results from four different methods of marking, namely :

1. The General Impression Method.
2. The Achievement Method.

   In this, the markers were to give marks in proportion as the writer achieved the purpose he had set himself. Defects of handwriting, spelling, grammar, punctuation, did not matter if the writer had communicated the particulars he wished to communicate.
3. The Analytic Method.

   In this, details of distribution of marks were given relating to mechanical aspects, information, vocabulary, rhetorical devices, logical aspects.
4. The Individual Method.

   In this, markers could use any method that appealed to them. Usually they selected methods 1 or 3, or a combination of these two.

The conclusion reached from the investigation is that "judged both by the extreme range and by the standard deviations which give the most comprehensive indication of variability the Analytic Method appears by far the best out of the four." [2] This confirms what the writer found in 1935,[3] that, both as a method of measuring and as an

[1] B. M. A. Cast, *An Investigation of Methods of Marking Composition*, M.A. thesis (University of London Library, 1939). Also *British Journal of Educational Psychology*, November 1939 and February 1940.

[2] P. 154. Cast.

[3] See "The Testing of Intelligence (edited H. R. Hamley), Report from *1935 Year Book of Education*, chap. x. *Diagnostic Tests in English* by Fred. J. Schonell (Evans Bros. and The Institute of Education).

instrument in diagnosis, a carefully constructed schedule is better than the method of general impression.

Teaching and Diagnostic Value of a Marking Schedule

For work in the present investigation with pupils backward in written English, the following schedule has been used extensively and has proved of considerable value.

Schedule O

Schedule for Marking Written Composition

A. Thought or Content and Vocabulary. (12 marks)	1.	Clearness and Continuity of Thought.
	2.	Originality of Ideas.
	3.	Interesting or Uninteresting Material.
	4.	Use of Words.
B. Structure. (7 marks)	5.	Variety of Sentence. (Conjunctions and sentence patterns.)
	6.	Correctness of Sentence Structure.
	7.	Paragraphing and General Unity.
C. Mechanical Accuracy. (6 marks)	8.	Spelling.
	9.	Punctuation.
	10.	Grammatical Accuracy.

Twenty-five marks are allowed for the composition under consideration, and these marks are distributed into three sections, as represented by the thought or content aspect of the composition, its structural accuracy and variety, and its mechanical accuracy.

It is obvious that for diagnosis and for guidance in teaching, the schedule is more objective, more analytic, and more indicative of the needs of the pupil [1] than the

[1] For older pupils 9+ to 16 years additional diagnostic information can be derived from the *Schonell Diagnostic English Tests* (Oliver and Boyd Ltd.). Results from these supplement in greater detail sections 4, 5, 6, 9 and 10.

method of general impression. The threefold assessment of the composition reveals the pupil's relative strengths in the content, structure and mechanics of his written English and so guides the teacher to more effective remedial teaching. A marking schedule for written composition is diagnostic in so far as it aids the teacher in planning his work, particularly in the more objective elements of written English. Naturally, some of his remedial teaching can be achieved, to a degree, through individual advice to the pupils concerned, but in classes where there is sectional work in written English, it will mean differentiation in the types of exercises set for different sections of pupils. Sometimes the diagnosis will reveal that fuller and more stimulating situations are required in the creative aspects of written expression, while at other times the thought or content of the compositions will be adequate but the form of expressing the thoughts or ideas unequal. For example, in one class of pupils aged 10+ and 11+ the following scores were obtained by particular pupils for the composition on " Home."

	Thought or Content. Maximum Marks 12.	Structure. 7.	Mechanics. 6.
P. W. . . .	7	2	2
A. H. . . .	10	5	3
J. H. . . .	9	1	1
H. W. . . .	10	3	0
T. M. . . .	4	3	5
V. T. . . .	4	6	6
C. H. . . .	5	6	6

The first four sets of scores illustrate cases of pupils who have something interesting to say, who reveal an adequate vocabulary and who show clarity and continuity of thought, but whose sentence structure lacks variety and whose punctuation, spelling and grammatical usage is much inferior to their expressional powers. This is particularly marked in the case of J. H. and H. W., who write long sentences joined by " and " or " then " and whose grammar

and punctuation is at least three years below the level of their thought, as judged by its originality and informative characteristics. These pupils obviously require help on the structural and mechanical lines, through carefully selected exercises or the use of appropriate models.

The second group of three pupils reveals a weakness of the opposite kind. The structural and mechanical aspects of their writing is adequate enough, but their compositions are short, uninteresting and lacking in continuity of development. Their sentences are sufficiently well formed, and they can use conjunctions, other than "and," "then," "so," but their ideas are often repeated; they reveal a paucity of vocabulary content, and there is in their compositions little which interests the reader. "Accurate, but ineffective," would aptly describe their efforts. For such pupils it is evident that many of the usual kinds of English exercises are a waste of time. These pupils require either fuller experiences or more provoking situations to stimulate them to convey their ideas to other people. The use of visits, of activities, of group methods, of dramatic work, of letter writing, etc., for such pupils has already been discussed. The important fact is, I believe, to differentiate in the type of teaching required by different pupils, and it is in this respect that the marking schedule can help so much. Obviously, it is not necessary to mark every composition by means of a schedule with separate marks for each of the three sections. A practical procedure is to use an analytic method for every third or fourth composition in order to check progress and to indicate future requirements. Other written work can be assigned marks by general impression influenced by the knowledge that the assessment should take into consideration both the creative and the mechanical characteristics of the work.

Correction in Composition

The problem of correction in written composition is an extremely important one.

The method of correcting errors, on the part of both teacher and pupil, has at times a more important influence on quantity and quality of composition than the marking proper.

With pupils backward in written English it is essential to concentrate on a few errors at a time. In punctuation, grammatical usage and sentence structure there should be a plan of development, based on the importance and the universality of the errors made. Only a few errors of each kind should be corrected in the pupils' compositions. For example, with some pupils we might aim only at obtaining capital letters at the opening, and full stops at the end of sentences, or at correcting the most common inaccuracies in agreement of subject and verb. All other errors could for a time be neglected, for pupils are both dismayed and confused to find their papers covered with indications of the inaccuracy of their efforts. By simplifying the number of points we wish them to grasp and by maintaining their self-confidence, we achieve better results. In one class of backward girls, the teacher adopted the method of informing pupils of the error or errors that they were striving to eliminate during the current week, and the effect was superior to the vague, diffused, soul-destroying methods that characterise composition correction in many classes.

The Place of Spelling in Composition.—Words misspelt in compositions should not be penalised unless they are words which we should normally expect pupils to spell correctly in their written work. There is value in asking pupils to rewrite common words (within their spelling vocabulary) which they have misspelt. To penalise a pupil who misspells "good" words which improve his composition, is to show ignorance of the difference between a child's spelling vocabulary and his meaning vocabulary—the former is much smaller than the latter. Furthermore, if we mark every spelling error we make the child too spelling-conscious in his written work, with the result that he will, under such influence, look for a simpler but less suitable word which he knows he can spell. We thereby retard to some extent

the development of vocabulary and the moulding of the well-selected phrase, and we inhibit the flow of thought processes. Psychological information of this kind is further evidence of the value of a sensible programme for teaching spelling amongst juniors and backward seniors. The more words the pupil is confident he can spell, the more mental energy do we release for the main purpose of translating his thoughts into correctly constructed sentences, adequately framed and correctly arranged.

On the whole, extensive rewriting of corrected compositions defeats its own purpose, but occasionally it is useful to allow pupils to rewrite short compositions which have been corrected by the teacher. Here the teacher must be sure, with backward pupils, that they understand what they have to correct, for not a little correction means, in some classes, simply perpetuating the same error. In short compositions, which the teacher has corrected *with* the pupils, considerable benefit accrues if the pupil, there and then, rewrites the material in its correct form. He thereby appreciates points of punctuation, grammar and structure much more effectively. Much correction must, however, remain at the oral stage.

This leads us to another important point. It is helpful to correct some of what the pupil has written *with* him, and directly after he has attempted to express his thoughts in written language. Obviously, time and number in class impose limitations on this method, but with one group of pupils I found that correction taken quietly with a few pupils each lesson was more useful than that revealed to them several days after the composition had been completed. If we follow this procedure, we allow the pupils to write for ten or fifteen minutes. We then go quietly from pupil to pupil encouraging them to read to us what they have written, and suggesting in a co-operative, constructive way how they might have improved certain parts. The " this is wrong " impression of the red ink or blue pencil gives way to " listen to the sentence now " or " your first sentences would be better if " attitude. Pupils feel

that they are being helped individually. Help is given at the time of maximum value, and confidence is sustained. If the teacher keeps a record of the pupils assisted in this way, he can gradually cover the entire class in a number of lessons.

Finally, a device of importance for the pupils' emotional attitude towards the subject of written English is to use positive marking occasionally.[1] Mark only the good points in the composition. A " Good " or a tick indicates to the pupil the originality of an idea, the excellence of a phrase or a word, the suitability of a sentence construction or the correctness of the punctuation in a long passage in direct speech. (Stars for good sentences are particularly effective.) Teachers will find that the use of such incentives prevents pupils from forming attitudes of distaste and distrust towards English composition. Moreover, we thus make use of the subjective elements in written English and indicate that we regard composition as a means of self-expression, not a form of linguistic manipulation. It is doubly important that the emotional elements in the correction of written English should be given due consideration.

[1] For further information on the marking of English, see *The Marking of English Essays*, a Report on an Investigation carried out by a Sub-Committee of the International Examinations Enquiry Committee consisting of Sir Philip Hartog, Dr P. B. Ballard, Dr P. Gurrey, Professor H. R. Hamley and Dr C. Ebblewhite Smith (Macmillan & Co.). Although I am not in agreement with some of the conclusions, there is much of value in the report to teachers and examiners.

CHAPTER XX

SUMMARY AND EDUCATIONAL CONSIDERATIONS

We have in preceding chapters considered in full the various causal conditions connected with backwardness in reading, spelling, oral and written English. The psychological factors entering into the learning of these basic subjects, together with the conditions which prevent normal progress in them, have been discussed at length and illustrated in detail by concrete cases. Specific diagnostic measures and tests necessary for accurate analysis of the underlying causes of disability in the various subjects have been explained. In addition, appropriate remedial measures and teaching devices to decrease disability in reading, spelling, oral and written English have been fully outlined.

It now remains in this general summary to review the entire findings of the research, to determine the relative importance of causal conditions in each subject and to find possible commonality of causal conditions between the different subjects. Finally, a consideration of the educational implications arising from the study are important both to psychologist and teacher alike, while educational measures to further the efficiency of diagnostic testing and remedial teaching are a natural corollary from an intensive and far-reaching survey such as this.

Review of Causal Conditions

A review of the various causes of backwardness in their order of importance in the basic subjects will provide us with a bird's-eye view of the main barriers, physical and mental, which are apt to hamper a child's progress in acquiring the fundamental knowledge of the elementary school. It is important for teachers to realise the plurality

of forces operative in each school subject and to see how preventative measures in one subject will have their corresponding effect in other subjects. Inferences such as these are provided by the table below.

A. *READING*

CAUSES OF BACKWARDNESS IN WORD RECOGNITION

	Percentage of Cases[1] showing the Characteristic.
1. Weakness in perception of visual patterns of words;	
(*a*) in discrimination	42·8
(*b*) in perceiving the orientation and letter sequence of words	52·4
2. Weakness in auditory discrimination of speech sounds and associated visual symbols	51·6
3. Adverse emotional attitudes	42·9
4. Defects of visual acuity	26·0
5. Immaturity (i) psychological and organic (ii) educational	20·2
6. Irregularity of attendance	10·3
7. Frequent change of school	5·2
8. Speech defects	5·2
9. Neglect of reading disability within the school	4·8

B. *READING*

CAUSES OF BACKWARDNESS IN COMPREHENSION

Mainly Causes Specifically connected with Weakness in Silent Reading

(*a*) *Fast but inaccurate readers:*	
(i) Carelessness in perception of small words and parts of words and a tendency to omit words	30·8
(ii) Impoverished cultural background	28·4
(iii) Imaginative, highly strung, excitable temperament	20·6
(iv) Lack of concentration	18·9
(v) Quick word reading	10·8
(vi) Over-emphasis on expression in oral reading	8·4
(*b*) *Slow but accurate readers:*	
(i) Early difficulties in learning to read	52·4
(ii) Over-emphasis on phonic analysis of words	44·6
(iii) Slow mental reactions	15·6
(iv) Narrow eye voice span	10·2
(v) Excessive overt movements in reading	8·3

[1] The percentages for each subject exceed the 100 as the disability of numerous pupils was due to more than one causal condition, hence the overlapping figures.

C. *SPELLING*

CAUSES OF BACKWARDNESS IN SPELLING

	Percentage of Cases showing the Characteristic.
1. Weak visual perception of verbal material;	
(*a*) discrimination	9·5
(*b*) span	29·5
2. Weak auditory perception of verbal material;	
(*a*) discrimination	31·4
(*b*) span	19·0
3. Adverse emotional conditions	27·7
4. Visual defects	14·3
5. Irregularity of attendance	11·4
6. Inattention, apathy, lack of persistence	10·5
7. General disregard for details (temperamental)	7·7
8. Defective hearing	6·7
9. Speech defects	5·7
10. Frequent change of school	4·8

D. *ORAL AND WRITTEN ENGLISH*

CAUSES OF BACKWARDNESS IN ORAL AND WRITTEN ENGLISH

Environmental	
1. Insufficient out-of-school experiences to widen child's outlook and provide him with ideas	45·2
2. Poor and very poor home conditions	38·9
3. Insufficient reading experiences; spare-time reading in and out of school	36·3
4. Ineffective teaching methods:	
(i) insufficient encouragement or use of positive marking	55·7
(ii) no interesting, skilful development of sentence structure through concrete and activity aids	52·3
(iii) no incentives or audience situations	46·8
(iv) poor selection of topics	32·6
(v) over-emphasis on mechanical aspects	28·9
Intellectual	
5. General weakness in verbal ability:	
(i) in spelling	58·1
(ii) in reading	45·2
Emotional	
6. Dislike of the subject	56·8
7. Temperamental qualities and emotional attitudes of the child[1]:	
(i) lonely, solitary, sometimes inclined to extreme intraversion	25·8
(ii) emotionally unstable	25·8
(iii) lacking in concentration and persistence	16·1
(iv) extremely careless about details	12·9
(v) sulky, inclined to quarrel	9·7
(vi) phlegmatic, slow, lacking in emotional responses	8·3
(vii) over precise and careful (limited imagination)	7·1

[1] Some of these conditions refer to weakness in the mechanics of written English, others refer only to weakness in the imaginative aspects of English expression.

An examination of the entire table reveals that in all the basic subjects environmental, intellectual and emotional factors may produce backwardness. Occasionally, these forces act singly, but the nature of the figures suggests that more often they act conjointly and that the disability of a particular pupil may be ascribed to two or perhaps three causal conditions.

Relative Importance of Causal Conditions

Intellectual.—A complete tabulation of the causal conditions in the various subjects shows that in reading and spelling a weakness in perceiving complex visual patterns, either in discriminating them from other patterns or in correctly perceiving their orientation or intrinsic components, is the most outstanding characteristic of the backward pupils. This weakness is exhibited in some form by approximately 50 per cent. of the cases studied. It may arise from an actual defect in visual acuity, but the fact that the number of cases showing the weakness greatly exceeds the percentages showing visual defects—26 per cent. in reading and 14·3 per cent. in spelling—indicates that there are other factors, in addition to the physical, which cause this particular perceptual inaccuracy. For most backward pupils this visual perceptual weakness is psychological, and may be ascribed to their delayed maturation in this particular field of perception. Many of these backward readers and spellers are neither physically handicapped nor lacking in general intelligence; they will learn to read and to spell when they have naturally yet slowly developed greater power in this specialised perceptual ability of discriminating and orienting complex word patterns. Such progress is dependent upon their being given appropriate teaching at these later ages. The backward reader and speller of 8, 9 and 10 years requires planned continuous aid to compensate for the earlier period when he was unable to profit from teaching methods so beneficial to his fellow-pupils.

Next in importance as a cause of backwardness in reading and spelling is a lowered power of auditory discrimination in the field of speech sounds. This weakness on the auditory side is similar to that shown in visual perception —it reveals itself as an inability to analyse accurately the sound elements in words, to associate those auditory units with their appropriate letter or letters and to synthesise them into a word for the purpose of recognising it in reading or recalling it in spelling. Again, this weakness is only rarely due to physical imperfection, but usually to a psychological immaturity or deficiency. Some pupils are three or even four years behind their fellows in developing this specific ability of analysis and synthesis in verbal material. They require continued aid of a particular kind at a later age if they are finally to attain normal levels in reading and spelling.

Emotional.—One cannot but be impressed by the extent and importance of emotional conditions as causes of backwardness. These include two sets of influences : firstly, those emotional attitudes set up by the pupil towards his disability, towards his teacher or towards the methods used ; and secondly, those temperamental characteristics of the child, for example, neglect of detail (spelling disability) or emotional instability (disability in composition) which conflicted with some of the intrinsic mental abilities required for success in the particular subjects. Often in my own enquiries the acquired emotional attitudes arising from continued failure were more intense barriers to the pupil's improvement than intrinsic temperamental qualities. As the evidence from a large number of case studies of backward pupils accumulated, one was led to infer that however good remedial methods on the educational side were with such children, progress was limited unless some kind of therapeutic programme was planned to banish the feelings of inferiority, restore confidence, dispel apathy and awaken interest. On the other hand, changed emotional attitudes arise from interest, achievement and success, which are based on a sound remedial approach of an educa-

tional kind. Merely to arouse in the child a desire to read. to show him there are hundreds of words he can spell, or to reveal to him his unsuspected imaginative talent in written English on a particular occasion is simply to invite further emotional inhibitions unless this is followed up by a carefully and scientifically planned programme of remedial work based on a proper diagnosis of his individual difficulties. It is the combination of emotional and educational remedial methods which is so successful—an observation which naturally invites a statement of the needs for training teachers in both therapeutic and educational approaches to backwardness.

Environmental.—A glance over the combined table above reveals a recurrence of certain environmental conditions as causes of backwardness. Very poor home conditions which result in an impoverished cultural atmosphere and a limitation of those extra experiences so important in all branches of the spoken and written word appear as causal conditions of backwardness in spelling, reading and English. The percentages are as high as 28·4, 38·9 and 45·2 for various aspects of limited home conditions. Together with these must be considered such other factors as irregular attendance and frequent change of school, which are often found associated with more intense adverse environmental influences.

Related Disability in Verbal Subjects

A final point of importance with respect to backwardness in reading, spelling and English is the extensive evidence of correlative disability in all three fields. Of the pupils backward in reading no less than 85 per cent. had spelling ages below normal, and in 59 per cent. of the cases it was sufficiently marked to be regarded as backwardness in spelling. Many of those backward in reading and spelling also exhibited weakness in oral and written English. Of 93 pupils specifically backward in oral and written English the percentages of accompanying backwardness

in spelling and reading were 58·1 and 45·2 per cent. respectively.

General Principles of Remedial Teaching

A very brief summary of those principles upon which successful remedial teaching depends is provided below. The measures are listed in approximate order of importance.

(i) *Individual consideration* of the backward pupil, with recognition of his mental, physical and educational characteristics.

(ii) *Thorough diagnosis* with a few pertinent tests.

(iii) *Early success* for the pupil in his backward subject or subjects by use of suitable methods and materials.

(iv) *Dissipation of emotional barriers* through early success, praise, continuous help, sympathetic consideration of his difficulties, and sustained interest.

(v) *The need for a new orientation* towards the backward subject through new methods involving play-way approaches, activities, and appropriately graded material.

(vi) *Frequent, planned remedial lessons.*

(vii) *Co-operation with the parents*, particularly in the case of brighter children.

Methods for Developing Diagnostic Testing and Remedial Teaching

Although the detailed explanations given throughout the book of various diagnostic tests and remedial measures applicable in reading, spelling, oral and written English will enable many teachers to improve considerably their teaching of specifically backward pupils, yet there are other means by which the treatment of such handicapped children might be made even more effective. Some of these methods involve school organisation, while others

relate to county or state educational administration. They may be listed as follows :

(*a*) Courses for training teachers in diagnostic and remedial methods.[1]

(*b*) The formation of flexible groups within the school for a more scientific treatment of specific backwardness.

(*c*) The establishment of experimental schools for the treatment of specifically backward and difficult children.

(*d*) The use of qualified visiting teachers.

(*e*) The provision of suitable graded material for pupils backward in reading, spelling, arithmetic or English.

(*f*) The appointment of educational psychologists by Local Education Authorities.

(*g*) Extension of the help provided by Child Guidance Clinics.

(a) *Courses for Training Teachers in Diagnostic and Remedial Methods*

There is little doubt that the treatment of specifically backward pupils would improve considerably if teachers had additional training in this particular problem. Many of them feel the need for a more scientific approach and are willing to make certain sacrifices to acquire the necessary knowledge. In brief, there are three main lines along which such training should be pursued :

(*a*) Training in administering and interpreting diagnostic and attainment tests in reading, spelling, arithmetic and English.

(*b*) Help in understanding the importance of emotional factors as causes of backwardness, so that a simple therapeutic approach could be employed by teachers.

[1] A course of this kind, lasting one University Session and covering also other aspects of educational psychology, is provided for teachers by the Education Department, University of Birmingham.

(*c*) Discussion of various teaching methods useful for pupils backward in the basic subjects.

This threefold objective to help teachers in a more scientific treatment of specific backwardness can be achieved in two ways—either by a continuous course of lecture demonstrations in the evenings or week-ends or preferably by a short continuous course of eight or nine weeks' intensive work at a Training College where special staffing and equipment are available.

As an example of the work that can be done in weekly courses I cite the Kent Education Committee's Courses for Teachers.[1] These consisted of nine or ten weekly lecture-discussions and demonstrations each of two to two and a half hours. Each evening meeting was devoted to approximately one and a half hours' lecture-discussion and three-quarters of an hour's practical work, which consisted of the examination of test material, demonstrations of intelligence, attainment and diagnostic testing of children by the lecturer, and testing of pupils by the teachers themselves. As a preparation for each lecture-discussion the teachers did a certain amount of reading indicated by the lecturer. The Education Committee provided selected books and testing materials, while others were bought by the teachers.

The syllabus, with modification for particular groups of teachers, was usually of this kind :

A consideration of individual differences in children.

Intelligence tests—individual and group, verbal and non-verbal. Mental age. I.Q. Method of using Terman Revision of Binet Scale—precautions, materials, recording responses, etc.

Examination of items of Terman Test.

Testing of children by lecturer.

Discussion on errors made in Terman Testing.

I.Q. validity. Diagnostic and prognostic values.

1 The foresight of the Director of Education—formerly Mr Salter Davies C.B.E., M.A., and later Sir Phillip Morris, M.A.—and the practical help and encouragement of Mr W. Vickers, M.A., M.Ed., Inspector of Schools, materially contributed towards the success and usefulness of these courses for teachers in Kent.

Standardised attainment tests in reading, spelling and arithmetic. Median samples in composition.
Subject age. Educational age. Educational quotient. Achievement quotient (limitations).
Causes of backwardness in reading, spelling, arithmetic and English. Diagnostic tests in reading, spelling, arithmetic and English. Remedial teaching in the basic subjects.
Emotional factors in backwardness. Emotional effects of confusion (due to difficulties of symbolism), failure, punishment, parental censure. Dissipation of emotional barriers through success, interest, sympathetic consideration, etc.
Practical Work.—Administration of verbal and non-verbal tests. Training in the use of Terman tests with pupils of various ages. Practice in using attainment and diagnostic tests. Use of remedial teaching materials.

The success of such courses depends, firstly, upon the suitability of the lecturer, who must have first-hand knowledge of teaching problems in the basic subjects, as well as of testing techniques ; secondly, upon the enthusiasm of the teachers, particularly in preparing work and in making continuous attendance ; and thirdly, upon the attitude and help of the administrative and inspectorial personnel of the education service of the town or county.

But however well provided the weekly lecture courses may be with respect to these three essentials, they still have limitations, and, where possible, the longer course at a Training College or University has additional benefits as a method of training, in diagnostic testing and remedial teaching, teachers who have had experience of specifically backward pupils.

So far as I am aware, only three organisations in Great Britain have held terminal courses for teachers of backward children—these are the Central Council for Mental Health, London ; Goldsmiths' College, University of

London, and The Glasgow Education Committee.[1] The courses held at Goldsmiths' College were primarily for training teachers in dealing with dull and backward and specifically backward pupils in the ordinary elementary schools,[2] and dealt only indirectly with the problem of the mentally defective child. The courses, which extended over almost ten weeks, were attended by fifty teachers during the summer term of the University Session. In brief the content of the course was as follows :

I. The Mental Hygiene of the school child, including consideration of nervous and difficult children, play therapy and emotional causes of backwardness.
II. Individual differences in children and in teaching methods.
III. The mental, physical and environmental causes of backwardness. Backwardness in the basic subjects ; causes, diagnosis and remedial teaching.
IV. The technique of applying intelligence tests, diagnostic tests and attainment tests.
V. Nature and value of projects and social studies for backward pupils.
VI. Discussions and demonstrations in the teaching of English, arithmetic, reading, spelling, geography, history, speech training and dramatic work, mothercraft and everyday science.
VII. The use of the film, lantern, epidiascope and pictures with backward children.
VIII. Practical work and discussions ; classes on three half-days per week in art, music, eurhythmics, physical training, upholstery, needlework, pottery, clay modelling, bookbinding and toy making.

(Where possible, differentiation was made for teachers of juniors and seniors, boys and girls.)

[1] In this connection fine pioneer work has been done by the Committee's psychologist, Mr D. Kennedy-Fraser, M.A.

[2] The credit for the inauguration of a course of this specific nature is due to the Warden of Goldsmiths' College, A. E. Dean, M.A., M.Litt., whose foresight and persistence in dealing with the project brought it to maturity in spite of numerous difficulties.

IX. Group discussions of general teaching problems.

X. Practical testing with group and individual intelligence tests (performance and Terman Merrill Tests), attainment tests and diagnostic tests. Individual backward pupils and classes of children of varying ages were used as testees.

XI. Visits to Child Guidance Clinics, schools where there was outstanding work with a backward class, schools where particular subjects were treated on modern lines, experimental schools and special classes.

XII. An exhibition of books, materials, tests and apparatus suitable for use with backward children in Junior and Senior Schools.

The success of such a course as the above lies in its continuity and in the enthusiasm and avidity shown by teachers, who after teaching for 10, 12 or even 15 years are given an opportunity of "coming back to college" for a short period of ten weeks to acquire first-hand information on testing and special teaching methods, to discuss problems, to make visits and to do reading related to their particular interests.

A further indication of the value of the terminal course[1] is the spread of the right attitude towards the problem of backwardness and the imparting of more scientific techniques by members of the course to other teachers.

(b) *The Formation of Flexible Groups within the School for a more Scientific Treatment of Specific Backwardness*

Where schools are large enough much can be done, by forming special coaching groups, to aid pupils specifically backward in arithmetic or the verbal subjects. Thus in some junior schools all pupils backward in reading are formed into a group and are given reading lessons morning and afternoon with material suited to their levels. A

[1] An excellent course in testing, practical work and teaching methods for backward children with additional application to mentally defective pupils is also provided by the Central Council for Mental Health.

similar arrangement is also pursued in a few schools with those pupils requiring intensive arithmetic coaching. Results show that this concentrated individual consideration of their problems quickly brings many of them up to a level so that they can be redrafted to their usual class units.[1] But it is obvious that the success of such schemes depends, in no small measure, on the skill and experience of the teachers in charge of the backward readers or backward arithmeticians. A teacher who has followed courses similar to those outlined in section (*a*) is able to diagnose both quickly and accurately the particular difficulties of the pupils and to direct them in the right use of appropriate material for overcoming their backwardness.

(c) *The Establishment of a Special School for helping Backward and Difficult but intelligent Pupils*

A development of the coaching group within the school is the establishment of a special department to help difficult and backward children from other schools. Admission to the school is only for pupils sufficiently intelligent to profit from intensive, scientific coaching. This kind of organisation for backward pupils admits of greater flexibility and is particularly useful for helping children whose school work has been held up by the pervading influence of adverse emotional attitudes. The time-table for these maladjusted pupils can be so framed that activities contribute to a maximum in dispersing the inhibitory effects of emotional conflicts which have dammed up the pupils' normal intellectual expression. From what I have seen of this type of special school, its success depends almost entirely on the psychological qualifications of the staff—unless they have had really good training, not only in diagnostic testing and teaching, but in understanding the emotional problems of backward children, then I am convinced that the pupils are better back in the more normal atmosphere of an ordinary elementary school. The sole claim of such a school lies in the particular skill of the staff in being able

[1] In Edinburgh small adjustment groups are formed, while at Burton-on-Trent pupils attend, on certain days, a remedial reading centre.

to deal quickly and effectively along psychological lines with these intelligent retarded pupils. If the correct diagnosis and treatment is given, then it should be possible to draft these pupils back to their usual school life in a relatively short time. If such schools are staffed with ordinary teachers, not specifically trained, then the possibility is that they are special only in name, and the longer pupils are allowed to remain in this somewhat specialised atmosphere the greater is the danger of their regarding themselves as " problem " children.

On the whole, I find that it is better to treat specially backward children in their own school ; but where their associated emotional problems and lack of scientific aid within the school make this impossible then the special school for intelligent backward but difficult pupils may be an extremely effective solution.

(d) *Coaching Teachers*

Where, owing to the smallness of the school or to distance of travel, neither flexible groups nor a special school is possible, some areas have tried the system of visiting teachers to coach particularly backward children. But here again the justification for such an approach to the problem must depend upon the scientific training of the coaching teachers. If they have had the requisite special training then they will be able to short-cut the longer and less effective methods of the class teacher and offer help for subsequent instruction. But unless the coaching teacher can claim this proper training at some such courses as have been previously mentioned, then any possible advantages they have are heavily overweighted by the obvious disadvantages which arise from the lack of continuity and the difficulties of adjustment inevitably associated with a teacher not normally belonging to the staff and only visiting the school two or three times a week.[1]

[1] Visiting teachers have been used extensively with a fair degree of success in American Schools, and in a few areas in England.

(e) *The Provision of Suitable Graded Material for Pupils backward in Reading, Spelling, Arithmetic and English*

We have already indicated that the success of schemes similar to those outlined in (b), (c), (d) is dependent upon scientifically trained teachers, but a second essential for success is the provision of suitably graded material for pupils specifically backward in one or more of the basic subjects. Until recently teachers were handicapped in this respect, but now books are being produced by a few authors who really understand the educational and psychological implications of the particular problem they are tackling.

Publishers also lag somewhat behind, for the appeal to publish material for a small section of the school population, with a consequent smaller monetary return, is not a strong one. This might be overcome by groups of the larger Education Authorities making some kind of subsidised payments for the specific project to those publishers who have a real educational policy behind their publishing of school books.

The provision of reading books for backward seniors, of suitable arithmetic books for backward senior girls, and of graded English material for the pupils whose reading and spelling are very poor, are some of the problems only the fringe of which has as yet been touched by scientific methods. Yet the need for graded material to suit pupils of varying mental ages in the four basic subjects, with wide ranges in associated chronological ages, is vital. It is obviously as ridiculous to ask a pupil of 11+ to try to learn reading from an infant primer of the old "the fox was in a red box" type as it is to ask the backward arithmetician to work arithmetic exercises, the very grading, figures and wording of which have been factors in the production of his backwardness.

(f) *The Appointment of Qualified Educational Psychologists by Local Education Authorities*

The appointment of qualified educational psychologists by Education Committees—a policy which is slowly develop-

ing—is an additional way in which skilled help can be made available to those backward yet intelligent pupils common to elementary and central schools alike. The educational psychologist can assist considerably by his diagnosis of pupils and his advice to teachers on methods and materials. But to do this adequately he needs to represent a balance between psychological training and the experience gained from teaching and coaching.[1] His services to the Education Committee will be greatly limited if he simply brings to bear on his numerous educational problems the mind of an academic psychologist—it is quite conceivable that he will then view as one of his main functions the finding of I.Q.s of various pupils sent to him. This regrettable state of affairs will not arise if the educational psychologist has built up his scientific knowledge from his University training in psychology supplemented by his knowledge of handling and teaching children.

In addition to the excellent guidance that the educational psychologist can give to teachers, he can also exercise considerable influence through short lecture courses. Furthermore, his guidance in selecting suitable material for particular groups of backward children should be invaluable.[2] Where there is no Child Guidance Clinic available for this advisory work and for the treatment of difficult pupils, it would seem an economical and beneficial policy for Education Authorities to appoint educational psychologists.

(g) *The Work of Child Guidance Clinics*

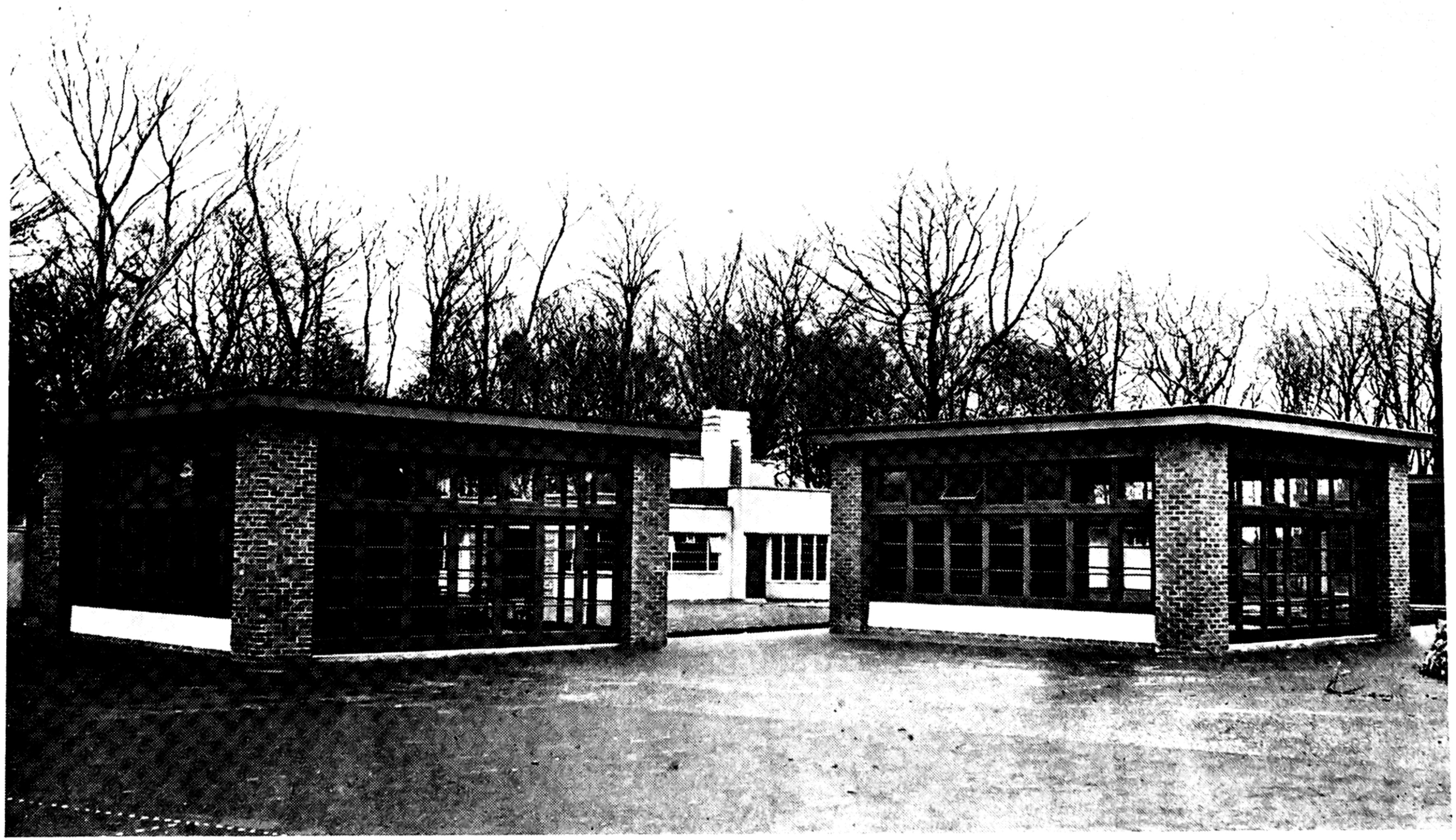
Although I strongly advocate that as many backward pupils as possible should be treated within their own school and by their own teachers, yet there are some difficult cases which need to be referred to outside institutions.

[1] University post graduate courses for training educational psychologists are now conducted at University College, University of London and at the University of Birmingham.

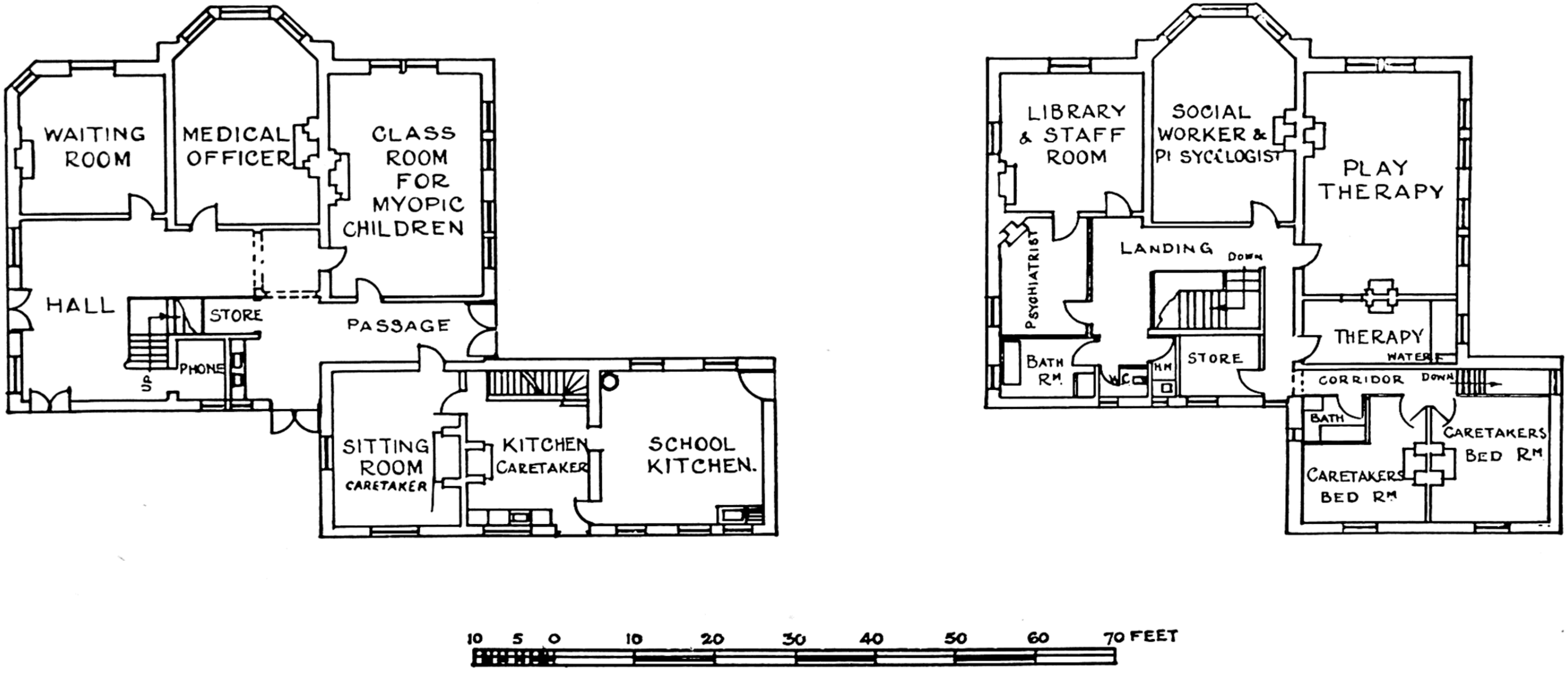
[2] See *The Education of Backward Children*, M. E. Hill (Harrap & Co.), for the excellent work done by an Education Committee's educational psychologist with respect to guidance of teachers in methods and materials.

For these cases the Child Guidance Clinic is admirably equipped, working as it does through the conjoint findings of a team of three—namely, the psychiatrist, the educational psychologist and the trained social welfare worker. Thus the emotional make-up, the intellectual and educational levels, and the environmental influences bearing upon the case are reviewed by competent independent assessors. In numerous cases, particularly in London Child Guidance Clinics with which I am best acquainted, the help that has been given to teachers as to the causal factors underlying the backwardness of some of the more intelligent and hence the more perplexing pupils has been of inestimable value. Especially marked is this help when the educational psychologist has been able to see the child for a number of weeks to start him off afresh in the subject or subjects in which he has been failing. Advice and assistance for the continuance of the remedial teaching have often been the starting point of the child's final and continued progress.

An interesting extension of the Child Guidance Clinic is to be found in Chesterfield. Here an appropriately named Children's Centre (Brambling House) includes on the same site not only a Child Guidance unit to help backward and difficult children but centres for the physical improvement of backward pupils. At the Children's Centre are found the medical officer, psychiatrist, psychologist, play therapist and social worker, while provision is made for a play-therapy room, dining-room and kitchen, rest-room, and five open-air classrooms. The late Dr H. G. Stead, rightly maintained that with many cases of backwardness the physical and environmental aspects of the problem require as much attention as the intellectual and the emotional. In statistics, kindly communicated to me by Dr Stead, of the various cases treated at the Children's Centre one finds that there are four groups of cases (classified according to reasons for which pupils were referred), namely, (*a*) nervous disorders, (*b*) bodily disorders, (*c*) behaviour disorders, (*d*) educational disorders. But the type of organisation at the Children's



Open-Air Classrooms at Children's Centre, Chesterfield. A Plan of the Centre is shown overleaf



Brambling House Open-Air School and Children's Centre, Chesterfield

Centre makes it possible to provide thirteen different types of treatment for the members of the four groups, the variations in treatment being mainly different combinations of psychiatric interview, play-therapy, open-air school, educational testing and remedial teaching.

It is not too much to say that a Child Guidance Clinic should be the right of every large town and borough.

Future Objectives

Here, then, are some of the ways in which teachers, inspectors and administrators can contribute towards a more scientific consideration of specific backwardness. The problem is not a big one and could be solved at a comparatively low cost. The treatment of this handicapped but intelligent section of our school population could receive more attention than it does at present. It is not for financial reasons that there is a lag in assisting specifically backward children, for there is extensive expenditure on mentally defective and dull children, whose possible contribution to society in adult life will, at best, be limited, while at the other end of the intellectual scale there is money wasted on "filling up" secondary schools with scholars who neither want nor profit from the too academic courses—Latin, French, Algebra, Trigonometry, etc.—that they have to follow. Yet not a few of the intelligent children who become backward in one or two subjects are allowed to remain backward until their difficulties colour their entire lives. Emotional factors of apathy, failure, loss of confidence and loss of initiative begin to influence mental attitudes in other scholastic fields, so that finally the pupil is impelled to look for compensatory forms of behaviour which will provide interest and achievement, and at the same time attract the attention of others. Not unnaturally some of these activities are anti-social. In this respect it is interesting to note that of 2000 delinquents examined at London Child Guidance Clinics recently, no less than 55 per cent. of them were markedly backward in reading and

spelling, and in this connection Dr L. Fildes holds—and my own researches confirm it—that the delinquencies of many such children are a direct result of their backwardness in school. There is undeniable evidence, in nearly every case, that adequate and sympathetic consideration of a pupil's scholastic problem is followed by a distinct personality change, not only of individual adjustment in confidence and initiative, but also of social adjustment in his attitude towards his fellows and his teachers. Hence the corollary is clear—less backwardness means less emotional maladjustment, which in turn means less delinquency and less neurosis amongst our school population. Important as are the educational implications of backwardness, those relating to the mental hygiene of backward pupils are of even greater significance for future citizenship, and it is upon this aspect of the problem that we conclude. Effective teaching which provides progress for all pupils in the fundamental subjects is an indispensable nutritive for the mental health of all children. And happy, well adjusted children mean happy, well adjusted adults who can make their fullest contribution to the community for the greatest benefit to all.

APPENDIX I

INSTRUCTIONS AND NORMS FOR DIAGNOSTIC TESTS IN READING

For copies of the tests, see pp. 522-3

Test R 2. Simple Prose Reading Test

Instructions for Administering.—" Read this aloud for me, please. Try to remember what you read, because I am going to ask you some short questions about it."

If a child baulks over a word, encourage him to try it, allow fifteen seconds, and if he is unsuccessful, ask him to spell the word. Note on the error sheet any incorrect versions given. If he still does not recognise the word, say it, let him repeat it, and then allow him to proceed. Record such prompting as an error. If the pupil rectifies an initial mistake in pronunciation, it does not count as a fault. Make the timing of the reading unobtrusive ; encourage pupils but do not interrupt them.

Immediately after the reading has been completed, take the text away and say, " Good, now answer these questions, please." Give the pupils time to think about any part of the material if they require it, but neither answer questions from them nor indicate whether their answers are correct or otherwise. Simply encourage them if necessary and proceed to the next question.

Table XXXI

Test R 2. Simple Prose Reading Test.

Average number of errors made

Reading Age in Years.	Average No. of Errors Made.
Less than 6·0	More than 18
6·0	18
6·5	14
7·0	11
7·5	8
8·0	5
8·5	3
9·0	2
9·5	1

Table XXXII

Test R 2. Simple Prose Reading Test

Averages for Comprehension and Speed

Reading Age in Years.	Average Time Taken in Minutes and Seconds.	Average No. of Questions Answered Correctly.
6·0	4 mins. 45 secs.	6·0
6·5	3 ,, 16 ,,	7·0
7·0	2 ,, 51 ,,	8·0
7·5	2 ,, 38 ,,	9·0
8·0	2 ,, 06 ,,	10·0
8·5	1 ,, 35 ,,	11·0
9·0	1 ,, 28 ,,	12·0
9·5	1 ,, 18 ,,	13·0

The averages[1] in the above table give two measures (*a*) speed and (*b*) level of comprehension. It is not likely that the busy class teacher will make use of (*a*), but he will find it useful to know how well the pupil understands what he reads. The reading age for work recognition (derived from Table XXXI) and the reading age for comprehension (derived from Table XXXII) will often show some difference, according to the use made by the pupil of the context and according to his general intelligence and verbal background.

Test R 3. Silent Reading Test. (Test A)

For ages 7 to 11 years

Instructions for Administering.—Give a sheet of paper to each pupil and direct them to write the letters (*a*), (*b*) underneath one another, and half an inch from the left-hand edge, continuing with the numbers 1 to 8. Then in the middle of the page the pupils continue with the numbers 9 to 18. Numbering on one side of the page eliminates errors regarding positions of answers. Pupils work in pencil.

Give out the Silent Reading Tests, a copy, face downwards, to each pupil. When all are ready, say, " To-day we are going

[1] The results of the Simple Prose Test are based on 512 cases, while in the remaining tests 1865 cases were used to obtain approximate norms. As the results are to be used for diagnostic purposes these numbers may be regarded as sufficient.

to do some silent reading puzzles. There are a lot of short paragraphs on the sheets. You have to read them carefully and quickly and then answer the question at the end of each paragraph." Pupils then turn over their tests.

"Look at the two paragraphs marked (*a*) and (*b*). I shall read the first one." A pupil is asked for the answer and then all write it opposite (*a*) on their papers. All pupils then read the second example together, the answer is obtained and written on the paper. Before allowing pupils to commence, warn them to write only single words for their answers wherever possible, and to read carefully but quickly. Allow nine minutes for the test. If the examiner desires a measure of speed of silent reading he can, at the conclusion of the nine minutes, direct the testees to put a ring on their answer paper round the number of the question last completed, and then to proceed until they complete the test. The time taken by each testee for the entire test can easily be obtained if a stop-watch is used. Direct pupils to raise their hands as they finish the test, the examiner can then write the time taken on their papers.

Marking.—Give a mark for each correct answer, whether it be expressed in a word or a phrase. Do not include answers of the two examples in the total.

Question 4. "Cannot tell" is incorrect, "Getting so dark" is taken as correct.

Question 9. "Pupil," "Scholar," "Child," is only partially correct; it does not show sufficient comprehension, therefore mark as wrong.

Question 17. "Field mouse" is sufficient to gain a mark.

Answers to Test R 3. Silent Reading Test (Test A)

(*a*) In a box.
(*b*) Closed.
1. In a tree.
2. Ten.
3. Iron.
4. No.
5. Happy.
6. Orange or yellow or amber.
7. Hardworking.
8. Backward.
9. Girl.
10. Yaina.
11. Evening.
12. Five.
13. Hot.
14. Bottom or bed.
15. Smoke.
16. Behind.
17. Field mouse's home.
18. Shell.

TABLE XXXIII

Test R 3. Silent Reading Test (Test A)

Average number of questions correct in nine minutes

Age in Years.	Number Correct in Nine Minutes.	
	Boys.	Girls.
7	6·5	7·5
8	8·4	9·2
9	10·4	10·9
10	12·3	13·5
11	15·0	15·7

TABLE XXXIV

Test R 3. Silent Reading Test. (Test A)

Average time (in minutes) taken to complete test and average number of questions correct in unlimited time

Age in Years.	Average Time Taken to Read Test.		Average No. of Questions Correct in Unlimited Time.	
	Boys.	Girls.	Boys.	Girls.
7	23·5 mins.	22·5 mins.	10·5	10·5
8	19·4 ,,	17·5 ,,	11·7	11·8
9	17·4 ,,	16·0 ,,	13·0	13·0
10	14·7 ,,	12·2 ,,	14·5	14·9
11	9·9 ,,	8·5 ,,	16·6	16·8

TEST R 4. Silent Reading Test. (Test B)

For ages 9 to 13 years

Instructions for Administering the Test.—Give a sheet of paper to each pupil and instruct them to number it downwards from 1 to 20. As each question has 2 answers the letters A and B, on separate lines, should be put against each number.

Commence half an inch from the left-hand edge. Direct them to continue their numbering in the middle of the page and to put opposite numbers 14 and 19 the letters A, B, C. Give out the test papers face down, and explain that they contain twenty short silent reading puzzles. Turn over the test papers, read the instructions, do the first example with the

pupils, and then allow fifteen minutes from the time testees commence question 2.

Marking.—Allow one mark for each correct answer. *Include* in the total the two examples (1A, B).

Answers to Test R 4. Silent Reading Test B

1A	wire	8A	himself	15A	difficulty
B	hole	B	fire	B	friends
2A	nests	9A	smoke	16A	tide
B	fields	B	streets	B	lost
3A	fish	10A	poor	17A	beach
B	bottle	B	rich	B	way
4A	hands	11A	branches	18A	drying
B	king	B	May	B	spoiled
5A	sad	12A	himself	19A	moist
B	owl	B	picture	B	cotton
6A	twelve	13A	birds	C	woven
B	four	B	lives	20A	savages
7A	one	14A	nothing	B	manner
B	two	B	body		
		C	breath		

TABLE XXXV

Test R4. Silent Reading Test B.

Average number of questions correct in 15 minutes

Years.	Boys. Months. 0.	3.	6.	9.	Years.	Girls. Months. 0.	3.	6.	9.
7	7	9	10	11	7	9	11	12	13
8	12	13	14	16	8	14	15	16	17
9	17	18	20	21	9	18	20	21	22
10	22	24	25	26	10	23	25	27	28
11	28	30	32	34	11	29	31	33	34
12	35	36	37	38	12	36	37	38	39
13	39	40	41	42	13	40	41	42	42

Test R 5. Test of Analysis and Synthesis of Words containing Common Phonic Units

Say to the testee, " Will you read these words for me, please ; read across the page." If the testee does not recognise the word, ask him first to spell it and then to sound it—note in the record booklet any incorrect analyses of words, particularly of vowel and consonantal digraphs—then ask him what the word is. If he is still unable to recognise the word, sound it for him and then ask for a response. Record further errors and pass on to the next word. The examiner need proceed only so far as to satisfy himself of the testee's power of phonic analysis and synthesis. Sometimes the test does not proceed beyond the second line, while at other times the whole test is given just to select the few phonic combinations in which the pupil is weak. As the test is purely for a qualitative diagnosis of the individual's phonic power, it is apparent that norms do not serve any useful purpose and hence they have not been obtained.

The material for the test is included in Appendix III.

Test R 5a. Names and Sounds of Letters

Instructions for Administering the Test.—" Will you please tell me the names of these letters. Yes ; now sound them for me." Then passing to the capital letters, say, " Will you please read these letters for me."

Record all errors or hesitations.

Test R 6. Test of Directional Attack on Words

Instructions for Administering the Test.—" Will you please read these words for me ; read downwards." All errors are recorded in detail.

As all the words in the test are correctly read by the normal pupil of seven years, all errors made represent, according to their numbers, varying degrees of weakness in reading, but as the primary purpose of the test is to reveal any particular weakness in reversals or part reversals, then it is the total of these errors made that is the most indicative diagnostic measure. Results show that more than *3 reversals indicate a weakness* in this direction. Naturally, the potency of the error should be noted by recording the number of reversals out of the total errors made.

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Vol. [redacted] Copy

Accession No. [redacted]

thread	pieces	who	down
play	three	babies	
said	danger	from	
basket	torches	twelve	
finger	burnt	picture	
velvet	sing	crags	
teach	patch	husband	
statue	afternoon	marble	

Test R 7. Visual Word Discrimination Test

In addition to the printed pages of material given in Appendix III on pages 542 and 543, this test requires the preparation of twenty-five small cards. These may be made from the perforated sheet of 25 words facing page 515.

The perforated sheet may be removed from the book and pasted on a piece of stiff manilla or light cardboard. The words are next numbered on the back, 1 to 25, and the sheet is cut up into 25 cards. If preferred, the sheet may be cut along the horizontal black lines into strips of three words, but if this is done, care should be taken to cover over the other two words when one word is being shown to the testee. The cards or strips may be kept in an envelope pasted into the back of the book.

Instructions for Administering the Test.—The cards bearing the key words are placed one at a time before the testee, in order from 1 to 25 as they appear on the test sheet.

The testee is then instructed as follows: "I want you to look carefully at the word on this card, and after I have taken it away I want you to find the same word on this sheet." Place the card before the child and allow him five seconds to look at the word, after which remove the card and say, "Now find it for me in this row," at the same time placing your finger on the row. If the testee does not select the correct word, advise him of his error and indicate that he should select another word. If the testee still makes a mistake, allow him to look at the word again for five seconds and give him two more trials. If, at the end of the fourth trial, he is still unable to succeed, pass on to the next word.

Having previously numbered in the record book, from 1 to 25, in readiness for the test, the investigator can record all incorrect selections made by the testees.

From the results a fairly accurate qualitative estimate of the pupil's power of visual perception of words can be gauged and of the particular error(s) to which he is prone.

APPENDIX II

INSTRUCTIONS FOR ADMINISTERING, MATERIALS AND NORMS FOR, SUPPLEMENTARY DIAGNOSTIC TESTS

TEST S 4. Immediate Recall of Three-Letter Words. Visual Presentation

(See pages 291-96, Chapter XIII, for a discussion on the use of the tests in the diagnosis of disability in spelling.)

Instructions for Administering.—" I am going to show you some three-letter words for a short time and then see how many you can remember. These are three-letter words :

(print in a column)

AND

CAN

BUT

Now the words are printed on this sheet. It will be shown to you for a short time, after which I shall take the sheet away and you will write the words on your paper.

No one must write until I take the sheet away. You must write the words in columns like this :

———	———	———
———	———	———
———	———	———
	———	———
		———

(Draw lines to represent parallel columns of words.) You write the first column like this, then the second alongside it, and so on. If you cannot remember a word put a dash, and then write the next word if you can remember that one. Suppose there were five words in a column and you could remember the first two, but had forgotten the next two,

and could remember the last one, you would write the column like this :

can
one
———
———
Tom

Try to write the words in their correct places and in their correct order."

While the paper is being pinned up with a drawing pin, ask the pupils to look on the desk. " Ready—look at the sheet." When all have directed their eyes towards the sheet, commence timing. Move towards the sheet two or three seconds before the time, take it quickly down, and *quietly* say " Write." Wait for all testees to finish before pinning up the next sheet. See that all pupils put pencils or pens on the desk in readiness for observing the next sheet.

See (i) that all understand to write in columns by just glancing over the papers at the conclusion of the first list ; (the common mistakes are to write across the pages or to put one column underneath another instead of alongside it) ;

(ii) that they understand to keep the correct order of the words;

(iii) that no pupil writes until instructed to ;

(iv) that there is no collaboration between pupils.

Do not speak while the pupils are looking at the words or while they are writing them ; absolute quietness is necessary for the test.

Material

GEM	VAN	CAT	HAM	PAN	JAR
BIB	WIG	BUN	FUR	DOT	PIP
SUN	JAM	HIP	JAW	RAY	RUT
	COT	NUT	FIN	DEN	MAP
		BOY	HAY	LAP	GUM
			DOG	SUM	PAW
				PET	LOG
					RIM

Times for exposure (in seconds)	9	12	15	18	21	24
Maximum marks	12	16	20	24	28	32

The method of scoring Tests S 4, S 5 and S 6 is given on page 293.

TABLE XXXVI

Test S 4. Immediate Recall of Three-Letter Words. Visual Presentation

Number of marks based on correct letters in correct positions

Age.	Boys.		Girls.	
	Average.	S.D.	Average.	S.D.
7	59·5	17·1	64·6	16·8
8	69·8	17·1	74·6	17·0
9	77·4	14·6	79·2	15·5
10	83·0	13·4	86·1	14·8
11	89·2	17·3	92·5	11·8
12	92·8	15·1	94·4	11·7
13	95·0	13·1	97·8	12·8

TEST S 5. Immediate Recall of Three-Letter Words. Auditory Presentation

Instructions for Administering.—"Now I am going to *read* you some three-letter words and see how many you can remember. I shall read a list of words through once slowly, after which you will write them in columns. Be careful to keep the words in the right order and to put a dash for any word you can't remember." See that the testees are quiet and expectant before commencing to read the words. Don't say "write" after concluding the reading of each column; merely lower the paper and wave your hand to indicate that they can commence.

Material

JET	BIN	FAT	BED	HEN	TAP
SAP	LAD	LID	RAG	BAY	PIT
FEN	FOG	BAR	HEN	TIN	LEG
	NET	ROD	LIP	RAT	BAT
		CAB	MUD	MOP	PUP
			CAN	BUD	CAR
				TAR	RIB
					MUG

Approximate time taken in reading (in seconds) .	9	12	15	18	21	24
Maximum marks .	12	16	20	24	28	32

TABLE XXXVII

Test S 5. *Immediate Recall of Three-Letter Words. Auditory Presentation*

Number of marks based on correct letters in correct positions

Age.	Boys.		Girls.	
	Average.	S.D.	Average.	S.D.
7	47·7	16·6	51·2	12·4
8	57·6	17·2	58·0	14·4
9	68·2	18·0	70·2	16·3
10	77·4	12·8	77·8	13·0
11	81·5	14·6	83·3	10·1
12	84·0	15·2	85·7	12·8
13	87·1	13·5	87·7	13·4

TEST S 6.

Immediate Recall of Three-Letter Nonsense Syllables. Visual Presentation

Instructions for Administering.—" Now in this test I am going to see how many three-letter nonsense syllables you can remember. A three-letter nonsense syllable is not really a word at all, it simply consists of three letters with a vowel in the middle, like these :

NAL
GOZ
WUL

As in Test S 4, the first test, the nonsense syllables are printed on sheets. I shall show the sheet and then take it away. You must remember not to write until I tell you, to keep the nonsense syllables in columns as you did in the other tests, to put the syllables in the correct order as far as you can and to put a dash for any you cannot remember. Just try as hard as you can, and don't worry if you can't remember all of them."

Material

	JED	ZID	KUV	NIV	KED	NOL
	KIB	BOL	TEF	POZ	BUP	PAB
	VEL	SEF	NAD	DIB	KIF	LIR
		YAB	LEB	FEG	RUZ	JEP
			DUT	ZAD	MOV	KOV
				TOB	JEB	TID
					VAD	BUP
						YAT
Time for exposure (in seconds) .	9	12	15	18	21	24
Maximum marks .	12	16	20	24	28	32

TABLE XXXVIII

Test S 6. Immediate Recall of Three-Letter Nonsense Syllables. Visual Presentation

Number of marks based on correct letters in correct positions

Age.	Boys.		Girls.	
	Average.	S.D.	Average.	S.D.
7	36·0	10·5	40·0	12·8
8	43·7	12·5	47·6	14·3
9	50·9	11·6	55·7	13·0
10	55·4	12·6	61·1	12·9
11	62·4	12·8	63·4	11·7
12	65·1	12·3	65·9	12·7
13	71·0	12·5	70·6	13·2

APPENDIX III

TEST R 2. Simple Prose Reading Test

Instructions for administering the test and equivalent reading ages in terms of errors made are given in Appendix I, pp. 509-510.

MY DOG

One day my dog cut his leg
on an open tin, so I put him
under my arm and ran to a shop.
Here a man wound some rag round the cut.
I then took my pet home
and made him lie down in a box of straw.

After three days he could put
his paw to the ground,
so we went for a short walk in the park.
At the end of a fortnight he had quite recovered
and we were able to play once again.

I am glad he is better because we like
to ramble together in the woods,
chasing grey squirrels, jumping over fallen trees
and playing hide-and-seek.

He is a very clever animal. He is able
to catch a brightly coloured ball in his mouth.
He quickly returns a stick to me
when I throw it away.
He can carry a basket between his teeth
when I go on errands for my mother
and he runs as swiftly as a hare.

Test R 2.

Simple Prose Reading Test

Questions to be asked after reading Test R 2

1. What did the dog cut itself on ?
2. Where was the dog taken when it cut itself ?
3. What did the man do to the dog's leg ?
4. What was in the box in which the dog had to lie ?
5. How long was it before the dog could put its paw to the ground ?
6. Where did the dog go for its first walk after it could put its paw to the ground ?
7. How long was it before the dog was quite well ?
8. Where do the dog and its master ramble together ?
9. What did they play in the woods ?
10. What else did they play in the woods ?
11. „ „ „ „ „ „ „ „ ?
12. What can the dog do ?
13. What else can the dog do ?
14. „ „ „ „ „ „ ?
15. „ „ „ „ „ „ ?

Test R 3.

Silent Reading Test A

Instructions for administering the test and average number of questions correct and times taken are given in Appendix I, pp. 510-512.

Time—9 minutes.

Read carefully each paragraph and the question at the end of it. Write the answers to the questions on your answer paper.

(*a*) I have a cat. It is black and white. It is one year old. It sleeps in a box. It likes to play with a ball of wool.

Where does the cat sleep?

(*b*) Every now and then along the roads we see low wooden houses with tightly shut windows and little gardens stocked with flowers.

Choose the word below that tells about the windows, and write it on your answer paper:

half-open open closed apart

1. I am a wild bird. My home is in a tree. I can fly high in the air. I can sing a song.

Where is the bird's home?

2. We have a baby. When we speak to him he waves his little hand. He has ten teeth. He sleeps in a cot most of the day.

How many teeth has the baby?

3. Last Monday we went to the Zoo. We spent much time in front of an iron cage which held seven monkeys. They made us laugh when they put out their paws for nuts.

What was the monkeys' cage made of?

4. It was getting so dark that Alice thought there must be a storm coming on. "What a thick black cloud that is!" she cried. "And how fast it comes! Why, I do believe it's got wings."

   Do you think the sun was shining? Yes. No. Cannot tell.

5. Hans took the stone and went off with a light heart; his eyes sparkled for joy and he said to himself, "I must have been born in a lucky hour; everything that I wish for comes to me of itself."

   Was Hans happy or unhappy?

6. In some cities coloured lights are used to direct the cars at cross streets. A red light means "Stop," an orange light means "Get Ready," and a green light means "Go."

   What light is used for "Get Ready"?

7. There was once a shoemaker who worked very hard and was very honest, but still he could not earn enough to live on, and at last all he had in the world was gone except enough leather for one pair of shoes.

   Choose the word below that tells what the shoemaker was and write it on your answer paper:

   lazy dishonest hardworking proud idle

8. When a duck wants to come to rest on water it draws its head backward, tilts its body upward, thrusts its feet forward and spreads its tail outward.

Choose the word below telling how the duck places its head. Write it on your answer paper :

upward forward backward downward

9. I can skip, I go to school every day, I wear a pretty dress, I have long hair.

What am I ?

10. Long ago there lived on the sea coast of Japan a young man named Yaina, a kindly fellow and clever with his rod and line.

Write the word Yaina on your answer paper. If you think he was a fisherman, put a line under his name ; if you think he was not, put a cross under his name.

11. The daylight is dying
Away in the West,
The wild birds are flying
In silence to rest.

Do these lines tell about evening or morning ?

12. Over the meadow
In the reeds on the shore
Lived a mother water-rat
And her little water-rats four.

How many water-rats altogether lived in the reeds ?

13. December is a winter month in England, but in Australia it is summer at that time of the year. Christmas Day comes on 25th December.

Choose the word below which tells what Christmas

Day in Australia is likely to be. Write it on your paper :

windy freezing hot cold frosty

14. A sailor dropped the captain's silver tea-pot into the sea. The captain went to the sailor and said to him, "You let my tea-pot fall into the sea, did you not? It is lost." "No, no," said the sailor, "I know where it is. It is at the —— of the sea."

Write the word that has been left out.

15. If you are waiting on shore for a ship to come in, the first thing you see is the smoke, later the funnels and masts come in sight, and lastly the hull of the ship itself is seen.

Suppose you were watching a ship leaving the land. Choose the word below that tells you the last thing you would see. Write it on your paper :

people masts smoke funnels hull

16. Behind the little house were apple trees, a plum tree and two or three pear trees. Then came a stretch of rough grass and a stone wall with a gate leading into the pasture.

Was the stone wall in front, behind, or at the side of the house?

17. A field mouse had a friend who lived in a house in town. Now the town mouse was asked by the field mouse to dine with him, so out he went and sat down to a meal of wheat.

Where did they dine? At the field mouse's home, or at the town mouse's home?

18. Upon a mountain height, far from the sea,
I found a shell,
And to my listening ear the lonely thing
Ever a song of ocean seemed to sing,
Ever a tale of ocean seemed to tell.
Which seemed to sing a song? The mountain, the shell, or the ocean?

Test R 4.

Silent Reading Test (Test B)

Instructions for administering the test and average number of questions correct are given in Appendix I, pp. 512-513.

Directions

Read each paragraph. You will notice that there are spaces marked with the letters A and B. Write on your answer paper the one word from row A that will make the best sense when put in space A, and write on your answer paper the one word from row B that will make the best sense when put in space B. Like this:

1. Fred had five white mice. He kept them in a tiny hutch made of wood and —— (A). One day when he went to feed the mice he found that they had gone. He looked around and found a small —— (B) in the wire.

A. bread, sand, wire, leaves, paper.
B. pot, nut, pole, stick, hole.

2. They came to the church tower, and all the crows flew out in fright. "Caw! Caw!"

they cried. "Go away! You must not peep at our —— (A)."

And then Tom and his friend went high, high up in the balloon till the church looked as small as a Noah's Ark and the sheep and the cows were like dots on the —— (B).

(A) game, hat, nests, books, dinner.
(B) plate, river, house, trees, fields.

3. One day a poor fisherman was casting his net into the sea, hoping to catch some —— (A). As he pulled in his net he saw in it a small glass bottle, but no fish. He picked up the —— (B) and looked at it. It seemed to be quite empty.

(A) wood, fruit, seaweed, fish, shells.
(B) fish, rope, bottle, stick, shell.

4. The king had just had a good sleep, for it was a hot day; and now he drank a cup of coffee and smoked a long pipe, and was happy.

His chief servant came in, and crossing his —— (A) upon his breast bowed low before him.

"Sir," he said, "there is a pedlar outside, and he has many costly things in his pack."

"Bring him in at once," said the —— (B).

(A) feet, flowers, pipe, head, hands.
(B) servant, man, pedlar, king, boy.

5. Just then the moon came out, and they saw an owl perched up on a beam, and wiping the tears from her great, brown eyes. "Why do you weep?" asked the king.

"I am so —— (A)," said the owl. "I am not really a bird, but a princess. A wicked man gave me a magic drink which changed me into an —— (B)."

(A) happy, long, fat, sad, glad.
(B) sparrow, woman, owl, man, beam.

6. A boy's name was Ross Smithson, so that each time he wrote his name he would write altogether —— (A) letters, and of these letters —— (B) of them would be the letter S.

(A) eight, ten, eleven, nine, twelve.
(B) two, five, three, four, six.

7. A boy was once fishing, and he had by his side a very large can in which to put the fish he caught. So far he had caught nothing. A man who was passing saw that the lad had a bite and waited to see whether he would bring the fish to land or not. He said to the boy, "How many fish have you caught, Tommy?" The boy replied: "When I have caught this —— (A) and —— (B) more I shall have three."

(A) cold, one, line, two, worm.
(B) bites, two, three, one, fish.

8. The big Polar Bear, which lived among the cold, snowy forest trees, hated the fire and the people who had it. He was greedy and wanted the North land all for —— (A), and he watched for a chance of putting out their —— (B).

(A) nothing, morning, himself, playing, others.
(B) fire, food, clothes, home, garden.

9. A pair of sparrows had built their nest in a hollow place near the top of a chimney. The wind sometimes blew the —— (A) about them ; but they did not mind that much for most of the day they spent in the streets below, chasing one another, peeping in at shop windows, or picking up crumbs from the village —— (B).

(A) leaves, stones, clouds, smoke, food.
(B) plates, streets, chimneys, roofs, trees.

10. In Paris, in the old days, it was quite common to find very rich and very poor people living near to each other. In a large building the underground rooms might be rented by the very —— (A) while in the large chambers above, where there was plenty of air and light, might live people who were very —— (B) indeed.

(A) rich, poor, old, fat, tired.
(B) poor, happy, rich, young, hungry.

11. Hundreds of years ago it was the custom for young men and women to go before day-break on the first of May to a wood near at hand ; some played music and some blew horns as they walked to the wood. They broke down branches of trees and gathered flowers. When they returned home about sunrise they decked their houses with the —— (A) and flowers. They spent the afternoon dancing around the Maypole which was placed in a suitable

part of the village and which stood there until next —— (B).

(A) ribbons, paint, nuts, branches, flags.
(B) autumn, winter, October, holiday, May.

12. A farmer visiting the National Gallery stopped before a portrait of a man sitting in a high-backed chair. On a card at the foot of the picture the farmer read these words: "A portrait of Edward Jefferies, by himself." The old fellow laughed to himself, saying, "How foolish these city people are. Anybody looking at that picture would know that Jefferies was by —— (A). There isn't anyone in the —— (B) with him."

(A) an artist, chair, himself, portrait, light.
(B) picture, gallery, farm, name, chair.

13. Birds travelling long distances usually fly at night and are attracted by the bright lamps of lighthouses. In the past, thousands of birds have been killed by dashing themselves against the thick glass. Nowadays, many of our lighthouses have been fitted with special frames on which the —— (A) perch and rest, and this has saved the —— (B) of countless numbers of birds.

(A) lights, sailors, birds, storm, fish.
(B) lives, ships, wings, flight, homes.

14. Two friends were travelling on the same road together when they met a bear. The one, in great fear, without a single thought of his companion, climbed up into a tree

and hid himself. The other, seeing that he had no chance single-handed against the bear, had —— (A) left but to throw himself on the ground and feign to be dead ; for he had heard that a bear will never touch a dead —— (B). As he thus lay the bear came up to his head, muzzling and sniffing at his nose and ears ; but the man held his —— (C) and the bear, supposing him to be dead, walked away.

(A) nothing, something, only, perhaps, neither.
(B) fly, leap, body, horse, orange.
(C) hand, paw, coat, gun, breath.

15. When the bear was fairly out of sight, his companion came down out of the tree and asked what it was that the bear whispered to him, "For," said he, "I observed that he put his mouth very close to your ear."

"Why," replied the other, "it was no great secret ; he only bade me beware how I kept company with those who, when they get into a —— (A) leave their —— (B) to look after themselves."

(A) stream, difficulty, house, train, road.
(B) money, pupils, goods, friends, horses.

16. The sailors who manned Cæsar's ships, too, made a mistake. There being a full moon and a Spring tide, the ships that he had grounded (for easier landing for his soldiers) were caught, badly anchored, by

the rising —— (A) and several were dashed against each other and —— (B).

(A) moon, soldiers, sun, fields, tide.
(B) saved, painted, helped, lost, found.

17. So long as icebergs sail over deep water they move freely about as the currents or winds may drive them. But when they get into water shallow enough to allow their bottoms to grate along the sea floor, they tear up the mud or sand there until they are at last stranded. The coast of Labrador is often fringed with such grounded ice-bergs, some so small as to be driven on to the —— (A), others so large as to run aground while still a long —— (B) from the shore.

(A) pier, fields, beach, streets, rivers.
(B) miles, view, ship, rope, way.

18. The flowers of the hop plants are collected and taken to the "oast house" or kilns to be dried. The oast house is shaped like a cone. At the top there is a big black funnel of tin which swings round in such a way as to prevent the wind blowing in the hole at the top of the cone. Inside the oast house the hops are dried on wire netting above a furnace. While they are —— (A) they must be turned over and over or they would be —— (B).

(A) boiling, drying, smouldering, cooking, raining.
(B) ripe, soft, wet, clean, spoiled.

19. Cotton goods cannot be made in every place. For spinning and weaving cotton well there must be moist air, plenty of water and plenty of coal. If the air is dry, the cotton threads snap when they are tightly stretched. The south-west winds which blow across Lancashire are moist or wet winds. They keep the air —— (A) so that —— (B) can be easily spun and —— (C).

(A) hot, dry, warm, moist, cool.
(B) wool, plants, rope, clothes, cotton.
(C) sold, woven, bought, coloured, worn.

20. One day we were becalmed among a group of small islands, most of which appeared to be uninhabited. As soon as we were in want of fresh water, the Captain sent the boat ashore to bring off a cask or two. But we were mistaken in thinking there were no natives, for scarcely had we drawn near to the shore when a band of —— (A) rushed out of the bush and assembled on the beach, brandishing their clubs and spears in a threatening —— (B).

(A) pigs, animals, savages, pirates, horses.
(B) wave, manner, help, yell, speech.

Test R 5.

Test of Analysis and Synthesis of Words containing Common Phonic Units

Instructions for administering the test are given in Appendix I, p. 514.

nip	get	rod	beg	had
gum	van	win	dug	let
mud	cow	boy	buy	say
mop	fir	our	yes	her
fish	dress	will	grew	from
ground	train	duck	spell	clock
bright	sing	gate	bark	meat
hear	dove	find	stick	hurt
nose	lock	past	sold	blue
bone	keep	crawl	fine	rail

road	book	boil	pool	cried
goat	thief	they	torn	which
duster	winter	until	forget	began
thunder	market	pocket	lifted	sunset
fishing	farmyard	helpful	empty	holiday
darkness	whenever	broken	remembered	contented
glittering	something	harvest	understood	catching
wonderful	important	pretend	inviting	refreshment

Test R 5a.

Test of Letters and Sounds

Instructions for the test are given in Appendix I, p. 514.

a e s u o i

t p f h d j

b k g q m v

w l y c n r

x z

U A I E M N

X C T R P Z

L F B J G D

K H O S V Q

W Y

Test R 6.

Test of Directional Attack on Words

Instructions for the test are given in Appendix I, p. 514.

Read down

bed	pot	sad	who
dig	pit	put	now
bad	top	stop	whose
boy	got	lap	how
of	on	rag	saw
for	to	gas	wash
from	dog	push	was
ton	no	what	raw
men	job	every	pig
new	do	yes	quite
wet	tub	very	leap
tar	sit	never	felt

Test R 7. Visual Word Discrimination Test

Instructions for administering the test are given in Appendix I, p. 515.

1.	thred	thraed	threab	threed	thread	threard
2.	peices	pices	qieces	pieces	pieses	piesese
3.	mho	how	wha	whos	who	ho
4.	donw	dawn	down	drown	dow	dowm
5.	plaiy	lay	paly	plag	pley	play
6.	thre	thrie	there	three	these	theree
7.	babies	babees	babes	babeis	babiese	badies
8.	siad	sed	saide	saed	said	sad
9.	dunger	dager	danqer	danger	dranger	gander
10.	forom	fram	fron	fom	form	from
11.	bosket	barkset	basket	bashet	baket	bakset

12. touches	torche	tonches	torhces	tarches	torches
13. tewlev	twelve	twleve	tewle	tewelve	twilve
14. finger	finsger	fingir	fringe	figer	finges
15. barnt	bunt	brunt	burnt	blurnt	lurnt
16. pucture	pictur	pitcure	picture	pictare	piclure
17. vevlet	velet	vevlete	velvit	velvet	velnet
18. sings	sinq	sing	sig	snig	sang
19. crages	crays	cargs	crugs	crags	crag
20. teech	tech	taech	treach	teack	teach
21. potch	porch	patech	path	patch	patck
22. hasband	husband	husban	hasbund	husdband	husdand
23. statne	sattue	stactue	stetue	statue	staue
24. aftermoon	aternfoon	afturnoon	afterrnoon	afternoon	afteroon
25. marbe	marble	mrabel	murble	mardle	mareble

APPENDIX IV

A Working List of Tests and Test Materials

This short list includes only a selection of tests useful to teachers for discovering the nature and extent of, and indicating the remedial measures for, backwardness amongst children.

An excellent review of all intelligence and attainment tests for a variety of uses in schools in Great Britain is given in Vernon's book, *The Measurement of Abilities*, pp. 198-207. See also chapter x, pp. 210-219, for Hints to Testers.

A. INTELLIGENCE TESTS

(a) Individual Tests

The most reliable individual test is *The New Revised Stanford-Binet Test of Intelligence*. Forms L and M. Age range 2-23 years.

Tests, together with instructions for administration, scoring standards and I.Q. tables corresponding to scores are given in *Measuring Intelligence*, Lewis M. Terman and Maud A. Merrill. (George C. Harrap & Co. Ltd.)

Materials Required

Copy of *Measuring Intelligence*. Price 10s. 6d.
Packet of card materials for Form L. Price 4s. 6d.
Packet of blue beads. Price 1s. 6d.
Twelve 1-inch cubes coloured blue.
Six-inch squares of plain paper.
Record booklets. Price 6s. per 25.
Short Record forms. Price 4s. 6d. per 50.
One stop-watch.

For children of mental age levels V-VI and under, the tester requires the box of testing materials. Price £2 5s.

All above material from Harrap.

A useful supplement to the Terman Merrill Test is a Performance Scale. Recently Alexander has standardised an effective scale consisting of three tests—The Passalong Test, Koh's Block Design Test and The Cube Construction Test. Instruction Book by W. P. Alexander and Manuals available from Thomas Nelson and Sons Ltd.

(b) Group Tests

(i) *Non-Verbal Tests.*

For pupils backward in reading—with reading ages less than 8 years—use either the Terman Merrill Test or a non-verbal group test.

ALEXANDER. *Junior School Grading Test.* Mental Age range $4\frac{3}{4}$-$12\frac{1}{2}$ years.
Manual 9d ; 3s. 6d. per 12 ; 6s. 6d. per 25 ; £1 per 100. (U.L.P.)

CATTELL. *Cattell Intelligence Tests.* Scale I Forms A and B 8-11 years.
Manual 1s. 6d. ; 6s. per 25 ; 21s. per 100. (Harrap.)

FLEMING. *Kelvin Measurement of Ability in Infant Classes.* 5-8 years.
Manual. Booklets, 20 for 2s. 6d. ; 50 for 4s. 6d. ; 100 for 8s. 6d. (Robert Gibson.)

MELLONE. *Moray House Picture Intelligence Test I.* 7-9 years.
Manual 8d. ; 10s. 6d. per 25 ; 30s. per 100. (U.L.P.)

SLEIGHT. *Non-Verbal Intelligence Test.* 6-10 years.
Manual 1s. ; 10s. 6d. per 25 ; 35s. per 100.
Most useful test for backward juniors or very dull seniors.

(ii) *Verbal Tests.*

BALLARD. *Group Test for Juniors.* 8-13 years.
No booklets required, given orally. Rather long, takes $1\frac{3}{4}$ hours. Copy on pp. 236-244, *The New Examiner*, P. B. Ballard. (U.L.P.) Norms from 14,000 children in *Notes on the Record Card.* (Kent Education Committee.)

RICHARDSON. *Simplex Junior Intelligence Scale.* 7-14 years.
Manual 1s. ; 5s. per 25 ; 17s. 6d. per 100. (Harrap.)
Not valid with pupils of reading ages less than $7\frac{1}{2}$ years.
Norms range to mental age of 18 years.

SCHONELL AND ADAMS. *The Essential Intelligence Test.* 7-11 years.
Manual 1s. ; 25 or over, 3d. each ; 50 or over, $2\frac{1}{2}$d. each ; 100 or over, 2d. each. (Oliver and Boyd Ltd.)
Particularly useful for junior classes and lower mental age ranges of backward pupils who can read.

THOMSON. *Moray House Tests.* 10-$12\frac{1}{2}$ years.
Manual 1s. ; 2s. 9d. per 12 ; 5s. per 25 ; 17s. 6d. per 100. (U.L.P.)
For sorting out pupils at top of Junior School, or entrants to Senior Department.

B. ATTAINMENT OR STANDARDISED SCHOLASTIC TESTS

(a) Reading

Accuracy of Word Recognition—Graded lists of words.

Burt Graded Word Vocabulary.[1] 4-15 years.

Vernon. Revision of Burt's test for Scottish children.[2]

Vernon. Graded Word Reading Test.[3] 5-21 years.

Schonell. Graded Word Reading Test.[4] 5-15 years.

Sentence or Prose Reading Test

BURT. *Continuous Prose Test.* 7½-14½ years.

SCHONELL. "*My Dog*" Test.[5] 6-9 years.

Measures of Comprehension and Speed—Prose

BURT. *Continuous Prose Test.* 7½-14½ years.

SCHONELL. "*My Dog*" Test.[6] 6-9 years.

Specially compiled for testing backward readers ; gives measures of both comprehension and speed.

SCHONELL. *Silent Reading Test A.*[7] 7+ to 11+ years.

A simple silent reading test, suitable for testing Junior School pupils backward in silent reading.

SCHONELL. *Silent Reading Test B.*[8] 9+ to 13+ years.

(b) Spelling

BURT. *Graded Spelling Vocabulary Test.* 5-15 years.

SCHONELL. *Graded Dictation Tests.*[9] 7½-13½ years.

[1] Burt's scholastic tests are printed in *Mental and Scholastic Tests* (P. S. King and Son), together with instructions for administering, scores and mental ages. The tests only are reprinted in *A Handbook of Tests* (P. S. King and Son). 3s. 6d. Norms for the graded vocabulary test for Kent are given in *Notes on the Record Card*, K. E. C.

[2] Copies of tests and details given in *The Standardisation of a Graded Word Reading Test*, P. E. Vernon (U.L.P.). 1s.

[3] *Ibid.*

[4] Test and instructions in *The Psychology and Teaching of Reading*, Fred. J. Schonell (Oliver and Boyd Ltd.). 6s.

[5] Copies of tests, instructions for administering the tests, and tables of scores given in Appendices I and III, *Backwardness in the Basic Subjects*, Fred. J. Schonell (Oliver and Boyd Ltd.). 20s.

[6] *Ibid.* [7] *Ibid.* [8] *Ibid.* These tests are printed separately, 2s. and 2s. 6d. per dozen (Oliver and Boyd Ltd.).

[9] *Essentials in Teaching and Testing Spelling*, pp. 23-27, Fred. J. Schonell (Macmillan).

(c) Arithmetic

(i) Mental Arithmetic

BURT. *Graded Oral Test.* $4\frac{1}{2}$-$14\frac{1}{2}$ years.

SCHONELL. Test 12. *Diagnostic Arithmetic Tests.*[1] $7\frac{1}{2}$-$14\frac{1}{2}$ years.

This is a ten minute test consisting of forty graded mental arithmetic examples. Answers only are written.

(ii) Mechanical Arithmetic

BURT. *Tests 11 to 14.* $8\frac{1}{2}$-$14\frac{1}{2}$ years.

These are five minute tests in each of the four rules with material of equal difficulty throughout. All examples are of this type :

92	9802	3749	8)67936
27	—6246	×9	
54			
95			

Tests are not applicable as tests of speed and accuracy in the fundamentals to pupils below an age of $8\frac{1}{2}$ or 9 years. Averages for London schools are given in the somewhat artificial form of number of correct figures in answers. Tests are useful for ages above 9, for which special norms for S. England are available in *Notes on the Record Card* (pp. 17-18) (Kent Education Committee), and for Scottish Schools (according to Vernon in *The Measurement of Abilities*) from W. B. Inglis, Moray House Training College, Edinburgh.

BURT. *Mechanical Written Test.* $7\frac{1}{2}$-$14\frac{1}{2}$ years.

Additional norms in *Notes on the Record Card* (Kent Education Committee).

HILL. *Southend Attainment Test.*[2] 6-14 years.

Handbook 6d. ; Packets of 50 of any one test 2s.

Full details, *The Education of Backward Children.* Pp. 33-39. M. E. Hill. (Harrap.)

[1] *Schonell Diagnostic Arithmetic Tests*, eighth edition (Oliver and Boyd Ltd.).
[2] *Southend Attainment Test in Mechanical Arithmetic*, M. E. Hill (Harrap).

SCHONELL. *Diagnostic Arithmetic Tests.*[1]

Test booklets, 25 and over, 5d. each; 50 and over, 4d. each; 100 and over, 3d. each. (Oliver and Boyd Ltd.).

By observing the time limits for each test, these tests provide useful attainment measures. Tests are given in the fundamental number combinations and in the four rules. The grading of the material makes the tests applicable to pupils of ages $6\frac{1}{2}$ to $14\frac{1}{2}$ years.

SCHONELL. *Essential Mechanical Arithmetic Tests Forms A and B.*

7-11+ years.

Graded mechanical arithmetic tests of 50 questions suitable for ages 7 to 11 (or to 13+ for backward pupils). Parallel forms of the tests make it suitable for retesting or record card purposes.

Manual 1s. 6d.; 25 or over, 3d. each; 50 or over $2\frac{1}{2}$d. each; 100 or over, 2d. each. (Oliver and Boyd Ltd.)

(iii) Problem Arithmetic

BALLARD. *Reasoning Arithmetic Test.*[2] $7\frac{1}{2}$-15 years.

Reprinted in separate booklets. 2s. per doz.

Additional norms. *Notes on the Record Card*, p. 16.

BURT. *Problems.* Written Test.

Additional norms. *Notes on the Record Card*, p. 16.

CATTELL. *Midland Attainment Tests,*[3] Arithmetic No. 2.

7 -$14\frac{1}{2}$ years.

Booklets 2d. each; 1s. 6d. per doz.; 8s. 6d. per 100.

Composite Arithmetic Tests (i), (ii), and (iii).

BURT. *Northumberland Standardised Test I.* $7\frac{1}{2}$-$14\frac{1}{2}$ years.

Manual 1s.; 25 for 3s. 6d.; 100 copies 10s. (U.L.P.).

Contains 7 tests—4 rules, mental and reasoning.

FLEMING. *Kelvin Measurement of Arithmetic Ability.* 7-12 years.

50 for 4s. 6d.; 100 for 8s. 6d. (Robert Gibson.)

[1] Details of administration, times, answers, scoring, and averages for various ages are given in *The Diagnosis of Individual Difficulties in Arithmetic*, second edition, Fred. J. Schonell (Oliver and Boyd Ltd.).

[2] *The New Examiner*, p. 193, P. B. Ballard (U.L.P.).

[3] *The Midland Attainment Tests, Arithmetic*, R. B. Cattell (U.L.P.).

SCHONELL. *Essential Problem Arithmetic Tests Forms A and B.* 7 to 14+.

Graded problem arithmetic tests suitable for ages 7 to 14. Parallel forms of the tests make it suitable for retesting or record card puposes.

Same Manual as for Mechanical Arithmetic Tests, price 1s. 6d. ; 25 or over, 3d. each ; 50 or over, 2½d. each ; 100 or over, 2d. each. (Oliver and Boyd Ltd.)

(d) English

(i) Composition

BURT. *Median Samples Narrative Composition*[1] 7½-14½ years.

SCHONELL. *Median Samples for each of four types of Composition.* 7½-13½ years.

Narrative, reproductive, imaginative, explanatory compositions.[2]

(ii) English Mechanics

(Punctuation, English Usage, Vocabulary, etc.).

BURT. *Northumberland Standardised Tests II.* 7½-14½ years.
Manual 1s. ; 5s. per 25 ; 17s. per 100. (U.L.P.)

ALEXANDER. *Thanet Test.* 10½-12½ years.
Manual 1s. ; 7s. per 25 ; 20s. per 100. (U.L.P.)

SCHONELL (F. ELEANOR). *Diagnostic English Tests.*[3] 9½-16 years.

Manual 1s. 9d. ; 25 or over, 5d. each ; 50 or over, 4d. each ; 100 or over, 3d. each. (Oliver and Boyd Ltd.).

Primarily intended as diagnostic tests but useful as attainment tests, using given times. Comprehensive measure of punctuation (including capitals), English usage, vocabulary and sentence structure.

[1] Median samples given in *Mental and Scholastic Tests*, pp. 395-398 (P. S. King and Son).

[2] Median samples together with detailed discussion of each set given in *Backwardness in the Basic Subjects*, chap. xvi (Oliver and Boyd Ltd.).

[3] Details of administration, scoring and averages are given in *The Handbook of Instructions*, (Oliver and Boyd Ltd.).

C. DIAGNOSTIC TESTS

Diagnostic tests differ from achievement or attainment tests in that they are more analytic. The speed or time factor does not enter into diagnostic tests, whereas it is an integral part of many attainment tests which aim at measuring the testee's level of accuracy and speed in particular subjects. The material of the diagnostic test is selected to provide a carefully graded catalogue of all the steps or elements in the process under consideration. Attainment tests assess levels, diagnostic tests analyse difficulties.

(a) Reading

Schonell. Test of Analysis and Synthesis of Common Phonic Units.[1]

Test of Directional Attack on Words.[2]

Visual Word Discrimination Test.[3]

(b) Spelling

Schonell. Regular and Irregular Words Tests.[4]

Graded dictation tests based on graded lists of common words (for spelling ages 6-12) for testing progress are also available for teachers.[5]

(c) Arithmetic

Schonell. *Diagnostic Arithmetic Tests.*[6]

Test booklets, 25 or over, 5d. each; 50 or over, 4d. each; 100 or over, 3d. each. (Oliver and Boyd Ltd.).

These consist of twelve tests covering the basic arithmetical processes. Thus tests 1-4 include the 100 basic number combinations in addition, subtraction, multiplication, and division (*e.g.* $9+7$, $17-8$, 9×3, $32\div8$). Test 5 is composed of all the most difficult number combinations in the 4 rules. Test 6 consists of 14 graded steps (4 examples to each step) in the process

[1] *Backwardness in the Basic Subjects*, Fred. J. Schonell (Oliver and Boyd Ltd.).

[2] *Ibid.* [3] *Ibid.*

[4] *Essentials in Teaching and Testing Spelling*, fourth edition, Fred. J. Schonell (Macmillan).

[5] *Ibid.*

[6] Tests and details of administration, scoring and analysis given in *The Diagnosis of Individual Difficulties in Arithmetic*, Fred. J. Schonell (Oliver and Boyd Ltd.).

of addition. The first 4 examples are of the type 15+4, while the fourteenth step includes examples such as

951
312
467
539
196

Test 7 provides a similar analytic survey of the steps (in terms of increased figures and increased difficulties such as 0 and like figures) in subtraction. Tests 8, 9, 10, 11 deal with multiplication and division (short and long) in carefully graded steps. The tests may thus be used to discover the pupil's exact difficulties in.

(*a*) the number combinations ;

(*b*) the four rules.

Such diagnostic procedure indicates the exact type of remedial work required.

(d) English

SCHONELL (F. ELEANOR). *Diagnostic English Tests.* Manual, 1s. 9d. ; Test booklets, 25 or over, 5d. each ; 50 or over, 4d. each ; 100 or over, 3d. each. (Oliver and Boyd Ltd.).

These consist of five tests. Test 1 covers all the common forms of *English usage*, graded according to difficulty. Test 2 provides an analysis of the common uses of *punctuation marks and Capital letters*—graded. Test 3 yields a measure of the testee's *vocabulary* by a considered selection of nouns, verbs, adjectives, adverbs. Test 4 provides an estimate of the pupil's ability in *sentence structure* (or sentence joining). Graded groups of 2, 3 and 4 sentences are to be joined into single sentences. Scoring is based on a carefully considered schedule. Test 5 is a short ten minute composition intended to reflect in a composite manner the four essentials analysed in Tests 1-4. A balanced analysis of written English is revealed by the test results.

APPENDIX V

School Record Card for Backward Pupils

The record card set out in the following pages has been designed for use with backward pupils. Throughout the book emphasis has been laid upon understanding each backward pupil as an individual—his backwardness should not be considered simply as a scholastic problem but as a condition involving the total personality. For this reason it is important that teachers and psychologists should compile for each pupil a record card which will provide a picture, not only of his scholastic levels, but of his intelligence, his temperament, his health, his attendance at school (and his attitude towards school), his home background, his interests and his hobbies.

In compiling the card, teachers should make use not only of tests but of knowledge gained by observation of and conversation with the pupils. The use of a record card is one of the best ways of enabling teachers to gain full and significant information about each pupil—many teachers have told us how rich and significant much of their knowledge about children becomes when they have made a simple case study such as a record card entails.

In general, a record card should be simple and practical, but, at the same time, accurate and reasonably comprehensive. For backward children we would add that a card should be diagnostic as well as assessive in its function. For this reason we have set out somewhat more fully the assessments to be made of subject attainments, and it is suggested that in the early stages of remedial teaching tests of the basic subjects should be given at six monthly intervals.

The card itself is self explanatory and does not demand special knowledge on the part of teachers to complete it. In the foregoing pages suggestions have been made about the actual objective tests which might be used with backward pupils.[1] Guidance has also been provided (chapter vi.) on the assessment of temperament and the recording of attitude and interests,

[1] Additional help of this kind is also available in *The Diagnosis and Difficulties in Arithmetic* and *The Psychology and Teaching of Reading*.

but useful supplementary information is to be found in Dr. C. Fleming's booklet *Cumulative Record Cards* (University of London Press). Under **Temperament** teachers may elect to use a five point scale, as suggested, or they may prefer to use the appropriate phrases given on pages 107 and 108.

Under **Social Competence or Awareness** those who use the card should try to assess the social development and social effectiveness of the pupils. Too often we neglect a social evaluation of the education of our pupils. Social competence is an objective to which the school can contribute materially through the teaching methods and the activities provided. Furthermore, the actual material in many of our lessons should have a social as well as a scholastic value. This can often be achieved by closer integration of subjects, and by the introduction of methods designed to provoke social awareness and to provide for the social needs of our pupils. It is not too much to say that the education of dull and backward pupils should include a specific objective of social training.

In the assessment of school subjects, other than those of reading, spelling, and arithmetic it is suggested that teachers might use a three point scale :—

(*a*) above average.

(*b*) average.

(*c*) below average.

Here the assessments might be relative, and should therefore indicate strengths or weaknesses compared with his work in other subjects and with the achievements of other pupils of similar chronological age in groups of about the same intellectual level. But here again the remarks of the teacher would help considerably in evaluating the abilities of the pupils in these more practical activities.

The entry under **Interests and Hobbies** should be as full as possible, for the information thus recarded may be of great value in suggesting starting points not only for remedial teaching but for fuller social development.

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THE BASIC SCHOOL RECORD CARD*

(For Backward Pupils)

Compiled by F. J. and F. E. SCHONELL

SURNAME .....

CHRISTIAN NAME(S) .....

Date of Birth		
Day	Month	Year

Admission Number.	School.	Address.	Date of admission.	Date of leaving.

Attendance.

Year								
Actual								
Possible								

REMARKS:

HOME CONDITIONS:

HEALTH REPORT (Based on information from S.M.O., parent and teacher).	
Year.	

* Obtainable separately in full size card form from the publishers Oliver & Boyd Ltd.

TEMPERAMENT:

Self Confidence:

Persistence:

Emotional stability:

Outstanding characteristics of personality, including any special difficulties:

Social Competence or Awareness:

INTELLIGENCE:

	Name of Test	Date	Name of Test	Date	Name of Test	Date	Name of Test	Date
Chron. Age								
Mental Age								
I.Q.								

REMARKS:

SUBJECT ATTAINMENTS.

READING:

Tests used	Date						
	(a) Word recognition age						
	(b) Comprehension age						

REMARKS:

SPELLING:

Test used	Date						
	Spelling age						

REMARKS:

ARITHMETIC:

Test used	Date						
	Addition age						
	Subtraction age						
	Multiplication age						
	Division age						
	Mechanical age						
	Problem age						

REMARKS:

ENGLISH:

Scale used	Date						
	Oral						
	Written Composition age						

	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS
Date					
CRAFTWORK					
WOODWORK					
GARDENING					
NEEDLEWORK					
DOMESTIC SCIENCE					
ART					
GAMES AND PHYSICAL ADJUSTMENT					

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